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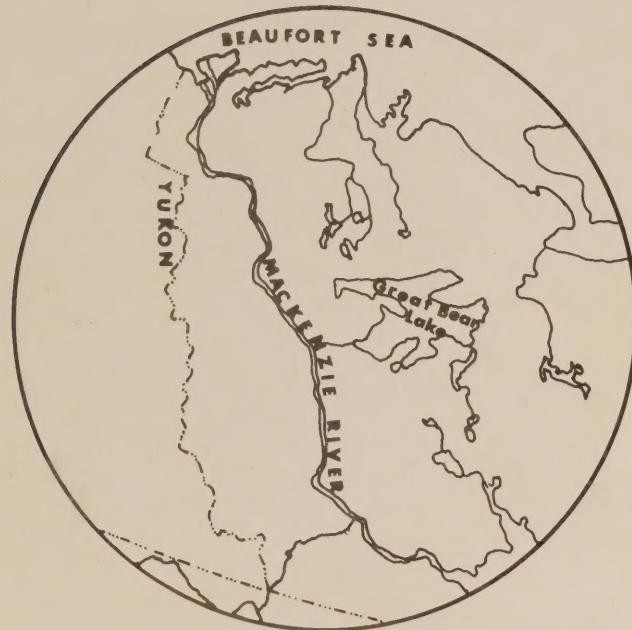
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# CENTRAL MACKENZIE

an area economic survey



**D. VILLIERS**



**RESOURCES AND INDUSTRIAL DIVISION**

**DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT**

*Canada*



## PREFACE

This report is one of a series of Area Economic Surveys carried out by the Industrial Division of the Department of Indian Affairs and Northern Development.

These surveys are a continuing part of the Department's efforts to determine the true local economic and social problems in the Northern Territories. Basically the surveys are intended to:

- 1) Assess the industrial resources and potential of the local population
- 2) Determine the degree of integration of these resources and the efficiency with which they are used
- 3) Identify and explain the social and economic factors affecting resource utilization
- 4) In a general way and in a regional context, assess the living of the local people in their environment

As the reader will note, these surveys are potential in method, presented in the reports as released for reference to this specific year, and are based on the views of the particular tribal or band which have been taken into account in the development of the survey. They are not meant to be general, but to reflect the views of the band, through and from local experience and consideration of the problems of a historical nature, and to reflect such historical experience when possible, through its contribution to the improvement of the material present and of the general population.

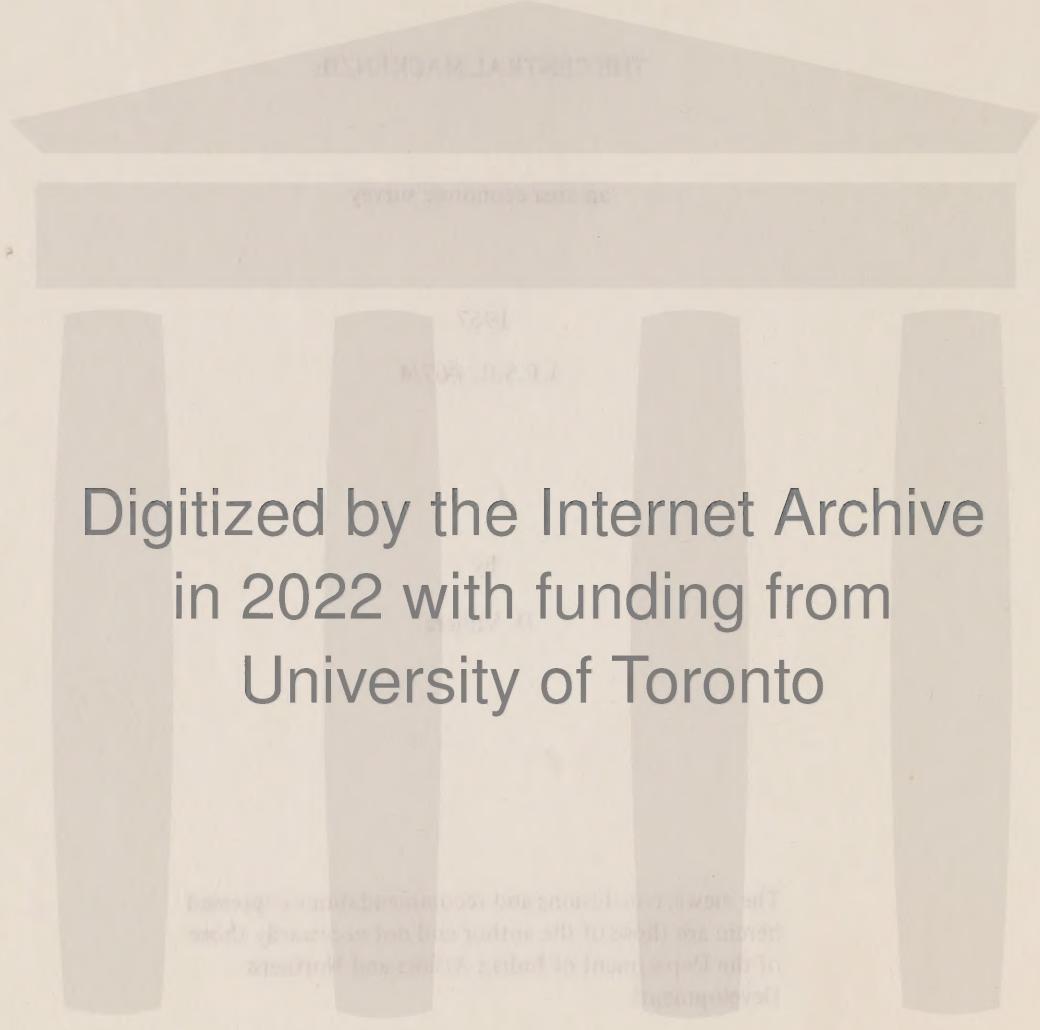
A.E.S.R. #67/4

The reports are published primarily for use with the Department, for distribution to other interested government agencies and the general distribution to various universities and organizations and individuals engaged in academic research, educational and other professional purposes.

D. Villiers

The following reports on First Nations have been published in the last few years in preparation:

| Area   | Author               |
|--------|----------------------|
| 66/1   | D. Villiers          |
| 66/2   | The Athabasca Region |
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## PREFACE

This report is one of a series of Area Economic Surveys carried out by the Industrial Division of the Department of Indian Affairs and Northern Development.

These surveys are a continuing part of the Department's efforts to determine the basis for local economic and social progress in the Northwest Territories. Basically the surveys are intended to:

- 1) Assess the renewable resources as to their ability to sustain the local population.
- 2) Determine the degree of exploitation of these resources and the efficiency of their use.
- 3) Investigate and explain the social and economic factors affecting resource utilization.
- 4) Recommend ways and means whereby the standard of living of the local people might be improved.

As the reasons for these surveys are practical, the material presented in the reports is selected for its relevance in this respect; much academic material gathered in the course of the investigation which may have been taken into account in the deliberations is necessarily excluded from these reports. On the other hand, authors have been given wide latitude in their approach and have been encouraged to give consideration to key problems of a theoretical nature and to include such theoretical argument where its inclusion is thought to contribute to the understanding of the material presented and of the practical conclusions drawn.

The reports are published primarily for use within the Department, for distribution to other interested government agencies and for limited distribution to libraries, universities and organizations and individuals actively engaged in northern research, administration or development.

The following reports in this series have been published to date or are in preparation:

| A.E.S.R. Title                         | Author                   |
|--|--------------------------|
| 58/1      Ungava Bay                   | J. Evans                 |
| 60/1      The Squatters of Whitehorse  | J. Lotz                  |
| 62/1      Southampton Island           | D. Brack                 |
| 62/2      Tuktoyaktuk-Cape Parry       | G. Abrahamson            |
| 62/2      Western Ungava               | R. Currie                |
| 63/1      The Copper Eskimos           | G. Abrahamson            |
| 63/2      Keewatin Mainland            | D. Brack and D. McIntosh |
| 63/3      Yukon Territory Littoral     | R. Currie                |
| 65/1      Banks Island                 | P. Usher                 |
| 65/2      Northern Foxe Basin          | G. Anders                |
| 66/1      The Mackenzie Delta          | D. Bissett               |
| 66/2      Rae-Lac La Martre            | G. Anders                |
| 66/3      Frobisher Bay                | S. MacBain (Miss)        |
| 66/4      East Coast-Baffin Island     | G. Anders, Ed.           |
| 67/1      Lancaster Sound              | D. Bissett               |
| 67/2      South Coast - Baffin Island  | G. Higgins               |
| 67/3      South Shore-Great Slave Lake | D. Radojicic             |
| 67/4      Central Mackenzie            | D. Villiers (Miss)       |



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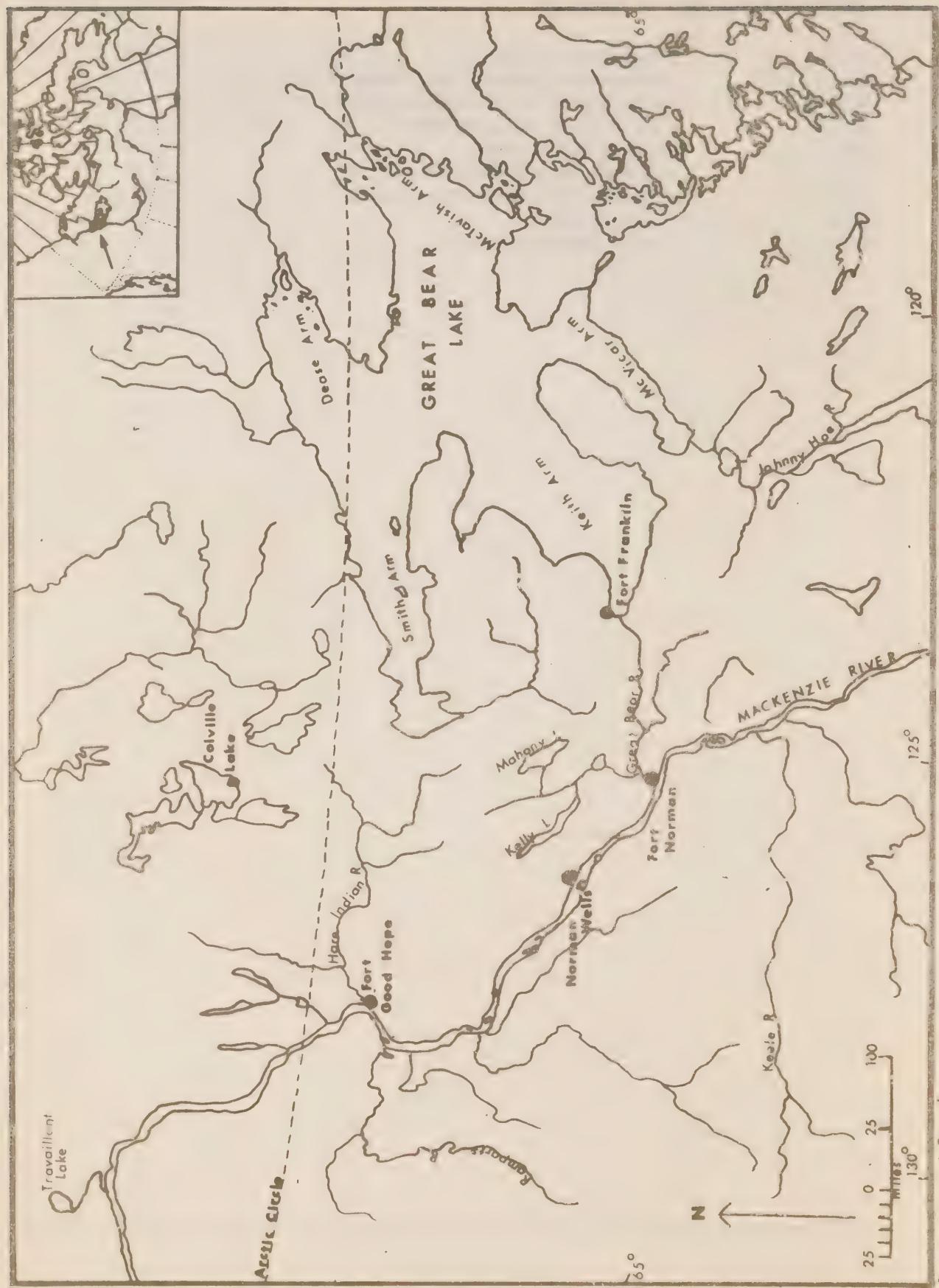
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**ABBREVIATIONS USED IN THE TEXT.**

|               |   |
|---------------|---|
| D.O.T.        | — Department of Transport.                            |
| D.I.A. & N.D. | — Department of Indian Affairs & Northern Development |
| D.N.H.W.      | — Department of National Health & Welfare.            |
| R.C.M.P.      | — Royal Canadian Mounted Police.                      |
| H.B.C.        | — Hudson's Bay Company.                               |
| N.T.C.L.      | — Northern Transportation Company Ltd.                |
| C.N.T.        | — Canadian National Telecommunications.               |
| I.O.L.        | — Imperial Oil Ltd.                                   |
| P.W.A.        | — Pacific Western Airlines Ltd.                       |

Figure 1  
SURVEY AREA 1967



## INTRODUCTION

This area economic survey is an attempt to examine the present economy of a group of settlements in the Central Mackenzie. The settlements included in this area are Norman Wells, Fort Norman, Fort Franklin, Fort Good Hope and Colville Lake. All the settlements are located in the sub-arctic zone of Canada and the forests are boreal in nature, becoming increasingly sparse in the northeast part of the resource area.

The general resource area extends from the east side of Great Bear Lake westward to include the Mackenzie Mountains. The north south limits are Aubry and Maunoir Lakes on the north and Blackwater Lake on the south. Great Bear Lake occupies the eastern part of the resource area, while to the west the Mackenzie River and attendant drainage systems dissect the Mackenzie Plain.

The population is predominantly Hare Indians and Metis with the exception of Norman Wells where the population consists of workers drawn from southern Canada. Small non-native populations consisting of administrators, police, nurses, teachers and missionaries reside in the other communities.

Economic diversity has been limited by severe climatic controls, distance and the relative paucity of resources. The majority of Indians and Metis are engaged in resource harvesting, hunting, trapping and fishing. The production of oil at Norman Wells and mining at Port Radium are the major activities in respect to the non-renewable resources. In recent years, big game hunting in the Mackenzie Mountains and sports fishing at Great Bear Lake have attracted increasing numbers of tourists.

Norman Wells located 1100 air miles northwest of Edmonton forms the hub of communication and transportation systems to and from the other settlements which are situated 65 to 170 miles from it.

The Indian and Metis populations in recent years have largely become settlement based with the result that resource utilization activities (hunting, trapping and fishing) are declining in importance. Rapidly increasing populations and limited economic opportunities have presented problems for Territorial and Federal governments responsible for the administration and well-being of isolated Indian and Metis populations.

The present status of the settlement economies is unsatisfactory in terms of in-puts of monies for development and productivity and an outflow of products. The narrow resource base and distance to markets are problems which cannot be easily overcome. Relatively large expenditures in capital investment would be required for a program of integrated resource use and marketing systems.

Resident populations are becoming increasingly dependent on the material comforts and technology of the larger Canadian society. These needs cannot be satisfied through traditional methods. The relationship of wage earnings and other sources of cash income to earnings from trapping provides some indication of the changing expectations, needs and patterns of economic activities of local populations.

Public funds for community development are not unlimited and costs are increased by the scattered nature of the settlements. In terms of economic development, a choice may have to be made between increasing the industrial level of individual settlements or the creation of a growth center with interdependent industries capable of employing a large sector of the total available labour force.

With the attainment of higher levels of education, and a wider range of marketable skills, residents will in time be able to replace non-residents in positions at present unavailable to them. During the transition period every effort should be made to increase the skills of the labour force, to provide assistance with re-location where desired, and to encourage the out-migration of the younger age groups.

As a considerable amount of literature exists on the historical and cultural aspects of this area a minimal amount of discussion has been focused on these. The emphasis of this study is on the economic aspects of the settlements, and the problems of developing the area as a whole.

Both library and field research have been used for this report. Field work in the settlements lasted from May to October 1967, and was followed by additional research at Fort Smith, Hay River, Edmonton and Ottawa. The report was compiled in Ottawa during the following year.

#### ACKNOWLEDGEMENTS

Many people and organizations contributed in various ways to the success of this survey. In order to extend my thanks as equitably as possible the organizations with which they were associated are given below:

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Department of Game Management

Department of National Health & Welfare

Department of Indian Affairs & Northern Development

Northward Aviation Ltd.

Pacific Western Airlines Ltd.

Northern Transportation Company Ltd.

The Oblates of Mary Immaculate

Imperial Oil Ltd.

Department of Fisheries

My sincere thanks are also due to an enormous number of people in the settlements and in the region for their interest and advice, and in particular for the generosity with which they contributed of their time, hospitality and assistance.

I should like to thank Miss. M. Hinds for proof reading the report and for her advice and suggestions. I am also very grateful to Mr. D. Bissett and other members of the staff of the Industrial Division for their advice and guidance.

Special mention must be made of Miss S. Levy who acted as field assistant for one phase of this survey.

## Chapter 1

### THE PHYSICAL ENVIRONMENT

#### Physiography and Geology

The physiography of the area can be divided into five regions.

Centrally located is the Mackenzie Lowland, a northward extension of the Great Central Plain of North America. The Lowland is a low lying depression of Palaeozoic sedimentary rock overlaid by glacial deposits. The area is composed almost entirely of swamp and numerous small lakes, and extends from Great Slave Lake in the south to the Arctic Ocean in the north. There is a relatively low divide to the north and north-east of Great Bear Lake separating the waters of Great Bear Lake from those that flow into the Arctic Ocean.

To the east, the Lowland is bounded by the Canadian Shield, and on the west by the Mackenzie Mountains.

The Franklin Mountains, an outlier of the Cordillera system, divide the western portion of the Mackenzie Lowland into the Mackenzie Plain, through which the Mackenzie River flows, and into the Mackenzie Lowland proper. These mountains are divided into two ranges. The Norman Range, in the north, extends from the northside of the Great Bear River to Fort Good Hope where it decreases in altitude. The McConnell Range joins the southeast flank of the Norman Range and runs in a southeasterly direction paralleling the Mackenzie River. The St. Charles rapids occur where the Great Bear River intersects this range.

The Mackenzie Plain is an area of low elevation between the mountain ranges, and forms the valley of the Mackenzie River. The Plain is approximately 250 miles long and tapers to the north and south from a width of 60 miles in the vicinity of the Great Bear River. At the northernmost end of this valley the Mackenzie River is constricted between 125 to 200 feet high Devonian limestone cliffs which are known as the Ramparts.

Fort Franklin, Fort Good Hope and Colville Lake are located in the Mackenzie Lowland proper, and Fort Norman and Norman Wells are both situated in the Mackenzie Plain.

The Mackenzie Lowland, which is a low lying depression extending from Great Slave Lake northward to Great Bear Lake, has developed on relatively weak horizontal sedimentary rocks that include considerable quantities of limestone. These rocks are all Palaeozoic or later in age.

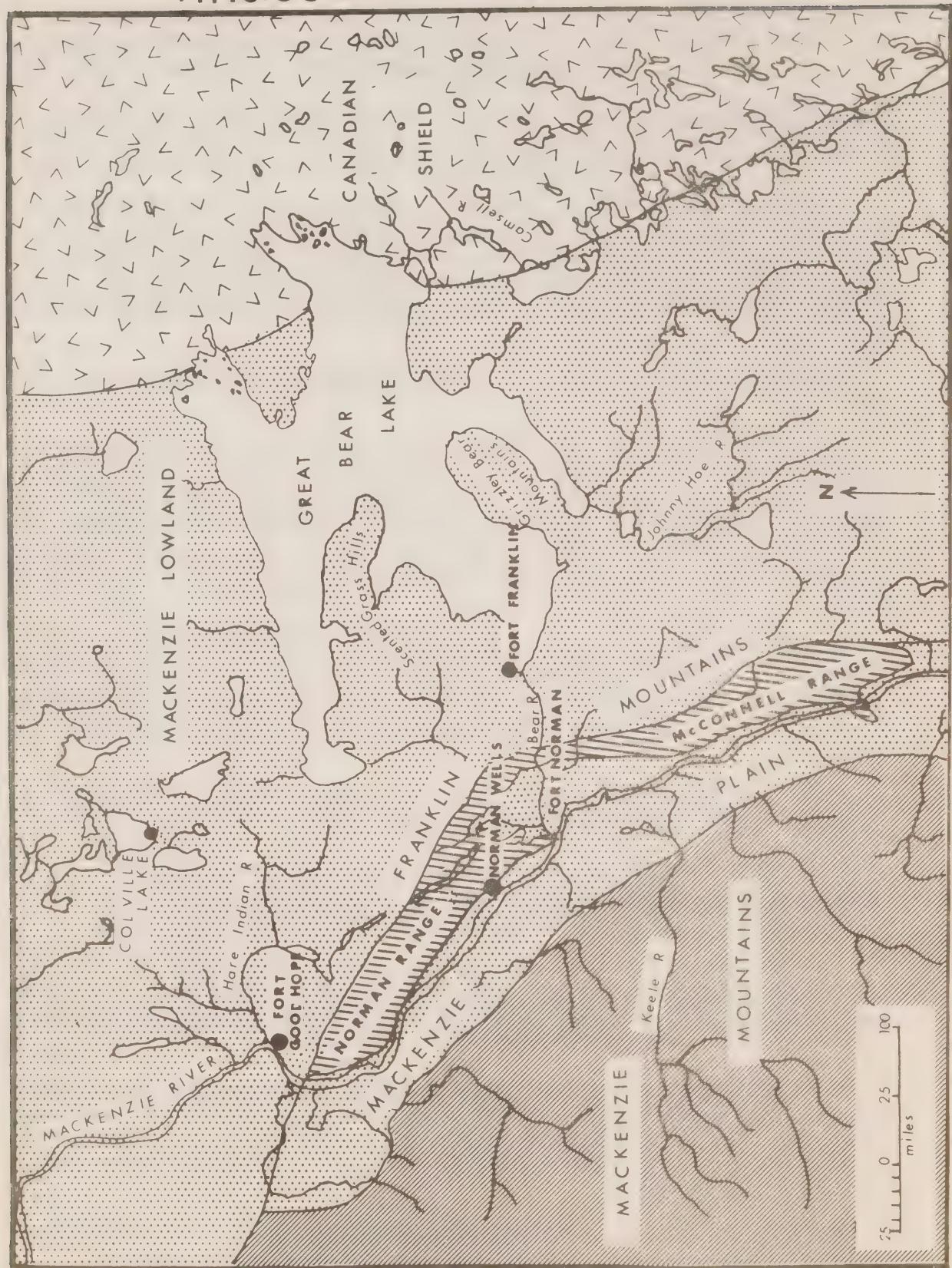
The 'Norman Basin', which is situated in the central part of the Lowland in the Mackenzie Plain, extends for 250 miles from approximately 100 miles south of Fort Norman to the Ramparts at Fort Good Hope. This is an area of flat lying or gently folded Tertiary and Cretaceous strata through which Palaeozoic rocks project to form elevations. Bear Rock, five miles north of Fort Norman is one of these.

In the Norman Wells area the basin is broken up by northwesterly tending low ridges of a mainly Palaeozoic formations, between which lie basins of Cretaceous and Tertiary strata. The oil at Norman Wells is drawn from a coral limestone reef, contacted at a depth of approximately 1500 feet, that is sealed between an upper and a lower shale series of Devonian Age. Sandstones and shales outcrop near the wells and are also of Upper Devonian Age.

The wells are on the southwest flank of the Norman Mountains and are located northeast of Norman Wells. The beds dip gently in a southwesterly direction and pass beneath the Mackenzie River.

Figure 2

## PHYSIOGRAPHIC DIVISIONS



Source: Atlas of Canada

The Franklin Mountains which are composed of the Norman and McConnell Ranges, and extend from Fort Good Hope to the north side of Great Bear River, are composed of rocks of Silurian and Devonian Age.

To the east, the Central Plain is bordered by the Canadian Shield. Their line of contact extends from the east side of the Horton River, south to Dease Arm and then across the lake and south again through Gunbarrel Inlet of McTavish Arm along a shallow depression occupied by a line of lakes that include Hottah, Hardisty and Rae Lakes.

In the Great Bear Lake area two main provinces of the Canadian Shield may be recognized. The granite uplands of the south composed of predominantly Archean and Proterozoic rocks, and the sedimentary and igneous rock uplands of the northwest composed of rocks of Cretaceous and Proterozoic age.

### Drainage

Great Bear Lake and the Mackenzie River are the dominant drainage features.

Great Bear Lake with an area of about 12,000 square miles covers a major part of the eastern half of the resource area. The lake is 390 feet above sea level and has a shoreline of approximately 1,360 miles. The shores of the lake are in general low except for part of McTavish Bay and the land southwards of Smith Bay. Lake depths are known to exceed 270 feet.

Five main arms or inlets extend from the main body of the lake. These are Smith and Dease Inlet on the north, McTavish on the east, and McVicar and Keith Inlets on the south and southwest.

The lake is a dominant feature in terms of the subsistence activities of the people of Fort Franklin, providing fish for local consumption. As a navigable waterway, it provides a water route for both the Fort Franklin settlement and mining interests. Its potential as a tourist resource is being realized through sports fishing lodges catering to tourists.

The outlet for Great Bear Lake is Great Bear River, a fast flowing stream extending for about 30 miles to the Mackenzie River from the western extremity of Keith Arm. The current averages three to seven m.p.h. and the channel varies from 150 to 350 yards in width.

A portage road eight miles in length circumvents the St. Charles Rapids. This road was completed in 1936 and replaced high powered shallow draft scows.

The Great Bear River discharges into the Mackenzie, the vital water transportation link for southern shipping to Fort Norman, Norman Wells, Fort Franklin, Fort Good Hope (and Colville Lake).

Over a period of years, the river has been surveyed and major obstacles to shipping supplies by boat have been overcome. Tugs assist barge traffic through the San Sault Rapids which commence at mile 630. Northward, the Ramparts Rapids, beginning at mile 675, present no major obstacles to barge traffic except during low water periods around the middle of September. Vessels proceeding upstream are often assisted through a 500 yard chute formed during low water by a line extended to the south bank during the ascent.\*

The tributary rivers draining into the Mackenzie such as Little Bear River, Slater River, the Carcajou Donnelly, Hume and Tsintu provide access routes for Indian and Metis hunters and trappers moving to and from hunting and trapping areas. Otherwise, they do not form part of the over-all water transportation system. In the future, they may provide arteries for forestry and the development of hydro-electric systems.

---

\*The Great Slave Lake and Mackenzie River Pilot, 1958, p. 51-61.

## Soils

Very few studies on soils appear to have been made in the Arctic and Sub-Arctic regions of Canada. Evidence to date shows that soil profile development in the permafrost regions is weakly expressed. Even in the forested parts, under the best drainage conditions, weathering appears to be restricted to the upper foot of soil, and there is little leaching of soluble constituents. Under restricted drainage moss cover on the surface increases in thickness and the mineral soil undergoes little alteration. With poor drainage the organic layer increases to such a thickness as to be considered an organic soil.

In general, the character of the land surface and the nature of the mineral material upon which the soils are developing is related to the physiographic divisions. The river silts laid down by the Mackenzie River and its tributaries provide the most fertile soils, and it is upon these that the best forests are found, and where gardening has been the most successful. The resource area falls within a zone of discontinuous permafrost.

### Permafrost is one of the most important features of the area

One of the most important features of the area is the presence of permanently frozen sub-soil. This condition is found in all of the districts of the Mackenzie except for a small area in the south. The depth of permafrost in midsummer varies according to latitude, drainage qualities of the soil, and the extent and type of vegetation. In general, permafrost lowers the soil temperature and inhibits tree growth. But with the low average annual precipitation of nine to thirteen inches, this area would be semi-desert were it not for the permafrost, which reduces drainage and supplies moisture during the warm growing season.

Another effect of the reduction of drainage due to the presence of permafrost is the increase in the amount of poorly drained land. When this occurs in lowlying areas, swamp, or muskeg, results. A high percentage of the total surface of the survey area is muskeg.

## Climate

The climate of the areas is characterised by a long cold winter, and a brief cool summer with short transition periods between them. The coldest month is January and the warmest is July. The large range of temperatures makes it possible to distinguish six periods in the year.\*

\*Cold winter, with mean daily temperature below 0° F. Winter with mean daily temperature between zero and 32°. Spring, with mean daily temperature between 32° and 42°. Summer, with mean daily temperature between 42° and 70°. Warm summer, with mean daily maximum above 77°. Autumn, with mean daily temperature between 42° and 32°. All degrees in F. (Gendrew, 1955, p 19)

**TABLE 1**  
**TEMPERATURE – Monthly and Annual Averages.**

| Month | Fort Norman |      |       | Norman Wells |      |       | Fort Good Hope |      |       | Port Radium |      |       |
|-------|-------------|------|-------|--------------|------|-------|----------------|------|-------|-------------|------|-------|
|       | Min.        | Max. | Mean. | Min.         | Max. | Mean. | Min.           | Max. | Mean. | Min.        | Max. | Mean. |
| Jan.  | -24         | -10  | -17   | -26          | -11  | -19   | -30            | -12  | -21   | -21         | -9   | -15   |
| Feb.  | -21         | -4   | -13   | -23          | -7   | -15   | -28            | -10  | -15   | -24         | -10  | -17   |
| Mar.  | -12         | 10   | 1     | -12          | 10   | -1    | -19            | 4    | -7    | -11         | 8    | -2    |
| Apr.  | 7           | 30   | 19    | 7            | 31   | 19    | 1              | 27   | 10    | 4           | 25   | 14    |
| May   | 30          | 53   | 42    | 32           | 53   | 42    | 28             | 51   | 34    | 26          | 43   | 35    |
| June  | 42          | 68   | 55    | 46           | 68   | 57    | 43             | 68   | 53    | 38          | 57   | 48    |
| July  | 48          | 72   | 60    | 50           | 72   | 61    | 47             | 72   | 58    | 46          | 63   | 54    |
| Aug.  | 43          | 65   | 54    | 45           | 65   | 55    | 42             | 65   | 53    | 44          | 58   | 51    |
| Sept. | 33          | 51   | 42    | 35           | 50   | 43    | 32             | 50   | 39    | 37          | 48   | 42    |
| Oct.  | 19          | 32   | 26    | 20           | 32   | 26    | 15             | 30   | 19    | 22          | 32   | 27    |
| Nov.  | -6          | 6    | 0     | -4           | 9    | 3     | -13            | 3    | -7    | 1           | 12   | 6     |
| Dec.  | -21         | -7   | -14   | -21          | 6    | -14   | -27            | -10  | -16   | -15         | -3   | -9    |
| Year. | 11          | 31   | 21    | 12           | 31   | 21    | 8              | 28   | 17    | 12          | 27   | 20    |

Source: D.O.T. 1954.



## THE SEASONS

### Winter

During this period an anticyclone settles over the area and weather conditions become relatively stable. At this time the weather is predominantly very cold, clear and fairly calm. Mean monthly temperatures are below 32° from October to April and about -20° in January. At Fort Good Hope it is below 32° in the seven months October to April. In September, ice begins to form along the edges of streams and river banks, and around the shore of lakes. Young ice gradually increases in extend and depth across bodies of water until the total surface is frozen over. Travel by boat and aircraft becomes restricted and finally ceases until ice is formed in sufficient depth to support the various means of winter transportation.

### Spring

Spring begins with the rise of daily mean temperature to 32° and ends when it rises to 42°. The period is characterized by the melting of snow, the break-up of ice in rivers and lakes, increasing hours of daylight, and the arrival of birds in number.

### Summer

In summer the mean monthly temperature is above 50°. Temperatures in the 80's are not uncommon in the Mackenzie Valley, and from June to August the mean daily temperatures exceeds 60°. During this period when the anticyclone moves north, moisture is evaporated in large amounts. The atmosphere becomes less stable and occasionally frontal depressions moving south-east pass over the area bringing cool damp air with them.

### Autumn

The Autumn mean daily temperatures are between 42° and 32°. This period is characteristically one of increasing cold, decreasing daylight and the southward migration of birds. The cold front of the southward migrating anticyclone creates unstable weather conditions and an increasing number of heavy snowfalls occur during the late Fall and early winter.

## DAYLIGHT, TWILIGHT AND DARKNESS

One feature of note is the extreme length of daylight in the summer and of darkness in the winter. In the accompanying figure the category of twilight represents "Civil Twilight" which encompasses the time when the sun is between the horizon and 6 degrees below it.

## FROST

As seen from the following table, the frost free period in this area is relatively short. The unpredictability of the occurrence of frost presents a hazard to the growth of garden or agricultural produce which would otherwise benefit from the increase in the number of hours of daylight.

TABLE 2

### FROST

|                           | Fort Norman | Norman Wells | Fort Good Hope | Port Radium |
|---------------------------|-------------|--------------|----------------|-------------|
| <b>Average Frost Free</b> |             |              |                |             |
| Period (days)             | 46          | 91           | 53             | 70          |
| Last Frost - Average      | June 22     | May 29       | June 14        | June 20     |
| Earliest                  | May 23      | May 15       | May 25         | May 30      |
| Latest                    | July 14     | June 28      | July 14        | July 12     |
| First Frost - Average     | Aug. 7      | Aug. 28      | Aug. 6         | Aug. 29     |
| Earliest                  | July 19     | Aug. 7       | July 18        | Aug. 2      |
| Latest                    | Sept. 14    | Sept. 9      | Sept. 1        | Sept. 11    |

Source: D.O.T. 1969.

## THE SEASONAL ICE CYCLE

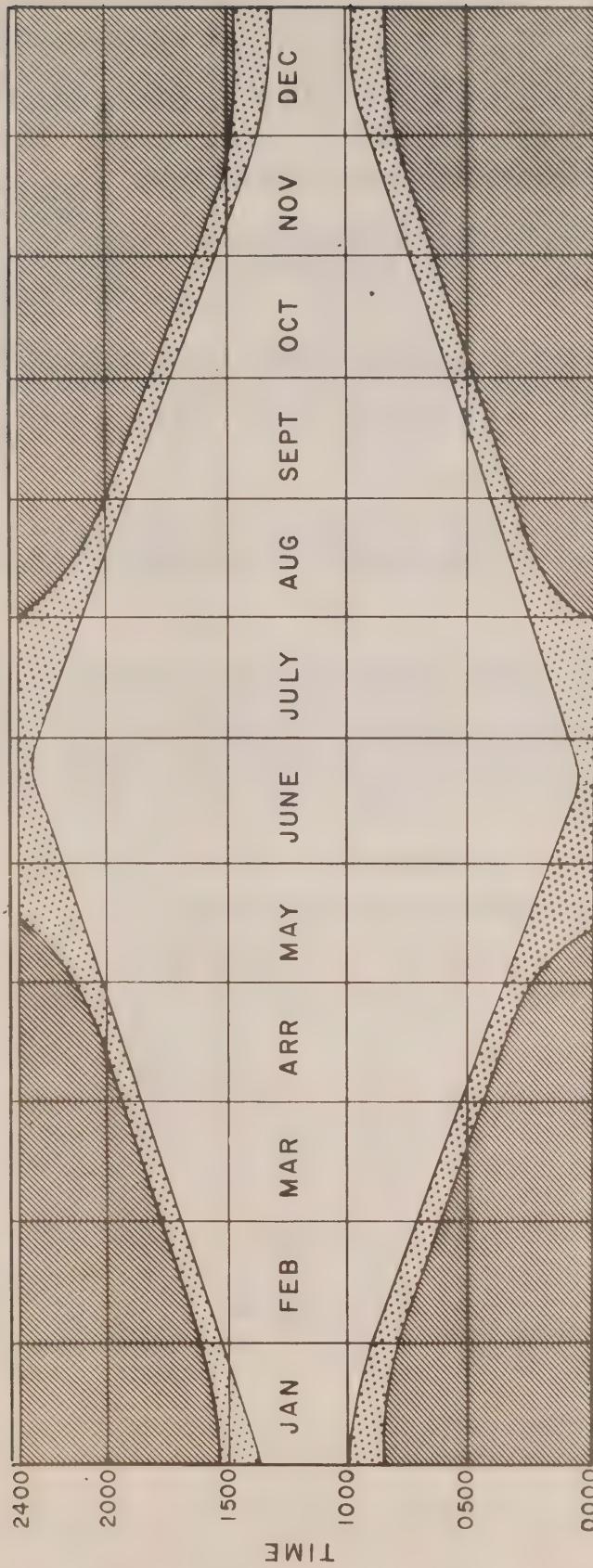
Break-up and freeze-up in this region lasts for approximately three weeks. The small lakes in the area start to freeze earlier than the rivers, and are slower to break-up than are the latter. The great size of Great Bear Lake differentiates its ice regime from that of all other lakes in the area. Ice begins to form in the northern and eastern parts of this lake during the second week in October, and usually by the end of the month the lake is completely covered by ice.

The first open water normally to appear in Great Bear Lake is near the exit of the Great Bear River where the current may keep the lake open or only lightly covered with ice during the winter. The open water at the southwest end of the lake spreads towards the north and east. By the end of June there is considerable melting in bays and along the shore line, and open leads appear between the islands in McTavish Arm. The smaller lakes to the northwest of Great Bear Lake are ice free at approximately the same time as are the eastern arms of the larger lake.

On the Mackenzie River freeze-up proceeds upstream and break-up downstream. The first area to start to freeze is that of the delta. By mid November the drift ice in the river has frozen together to form an ice cover, and for this reason Mackenzie River ice freezes "rough". Only if a sudden drop in temperature freezes the river before blocks join, will a section freeze smoothly.

The streams tributary to the Mackenzie River are ice-free first, and in breaking up loosen the ice of the main river. In the upper Mackenzie break-up usually occurs during the third week of May and the lower Mackenzie follows a week later,

FIG. 3

HOURS OF SUNLIGHT - TWILIGHT - DARKNESS  
LATITUDE 65° NORTH

Source: Arctic Air Navigation, Defense Research Board

In the following table break-up is defined as that period when there are sufficient open water areas offshore to allow the movement of small boats, or when the body of water is observed to be free of ice. The first dates given mark the beginning of the process.

Freeze-up is taken to mean the date on which the body of water is completely covered by ice.

TABLE 3  
MEAN DATES OF BREAK-UP AND FREEZE-UP

| Place  | Break-up          | Freeze-up             |
|--|-------------------|-----------------------|
| Fort Good Hope                                   | May 18 - June 2   | 1st week of November. |
| Fort Norman                                      | May 18 - June 1   | mid-November.         |
| Norman Wells                                     | May 8 - May 23    | mid-November.         |
| Port Radium                                      | June 21 - July 10 | end of October.       |
| Great Bear River                                 | May 19 - June 8   | End of November.      |
| Small mainland lake northwest of Great Bear Lake | End of June       | end of September.     |

Source: Allen, 1964, pp 65-115, and Rand, 1963, p. 21

Ice data is not available for Fort Franklin and Colville Lake. But from the above data and local enquiry, it appeared that at these two settlements freeze-up starts earlier and break-up occurs later than at the river settlements.

#### PRECIPITATION

Precipitation in the area is low. The annual average precipitation ranges from 9 to 13 inches. Almost two thirds of this falls during the summer from May to September, except in the vicinity of Fort Good Hope where the precipitation has a higher snow content. Usually precipitation is light in intensity. But during the summer thunderstorms periodically occur, and occasional blizzards during the winter bring heavy snowfalls. November and December are the months of heaviest snowfall, and the snow remains on the ground from October until May.

TABLE 4  
PRECIPITATION—monthly average in inches

| Month | Fort Norman |      |         | Norman Wells |       |         | Fort Good Hope |      |         | Port Radium |      |         |
|-------|-------------|------|---------|--------------|-------|---------|----------------|------|---------|-------------|------|---------|
|       | Rain        | Snow | Precip. | Rain         | Snow  | Precip. | Rain           | Snow | Precip. | Rain        | Snow | Precip. |
| Jan.  | —           | 5.3  | 0.53    | —            | 6.5   | 0.65    | —              | 7.2  | 0.72    | —           | 3.5  | 0.35    |
| Feb.  | —           | 4.8  | 0.48    | —            | 5.8   | 0.58    | —              | 6.0  | 0.60    | —           | 2.5  | 0.25    |
| Mar.  | —           | 3.4  | 0.34    | —            | 3.4   | 0.34    | —              | 6.4  | 0.64    | —           | 5.2  | 0.52    |
| April | —           | 4.2  | 0.45    | 0.08         | 4.6   | 0.54    | 0.02           | 4.8  | 0.50    | 0.02        | 2.2  | 0.24    |
| May   | 0.75        | 1.7  | 0.92    | 0.49         | 1.8   | 0.67    | 0.36           | 4.1  | 0.77    | 0.39        | 2.1  | 0.60    |
| June  | 1.56        | 0.3  | 1.59    | 1.38         | 0.2   | 1.40    | 1.20           | 0.2  | 1.22    | 0.60        | 0    | 0.60    |
| July  | 1.96        | —    | 1.96    | 2.02         | —     | 2.02    | 1.55           | —    | 1.55    | 1.32        | 0.3  | 1.35    |
| Aug.  | 1.92        | 0.1  | 1.93    | 2.65         | trace | 2.65    | 2.09           | 0.1  | 2.10    | 1.83        | 0    | 1.83    |
| Sept. | 1.07        | 2.4  | 1.34    | 1.38         | 2.8   | 1.66    | 1.01           | 2.2  | 1.23    | 0.82        | 0.7  | 0.89    |
| Oct.  | 0.13        | 7.7  | 0.90    | 0.12         | 6.5   | 0.77    | 0.20           | 10.0 | 1.20    | 0.29        | 6.7  | 0.96    |
| Nov.  | —           | 9.1  | 0.91    | trace        | 8.4   | 0.84    | 0.01           | 10.1 | 1.02    | trace       | 8.4  | 0.84    |
| Dece. | —           | 5.0  | 0.50    | —            | 6.7   | 0.67    | —              | 6.2  | 0.62    | —           | 5.2  | 0.52    |
| Year  | 7.42        | 44.3 | 11.85   | 8.12         | 46.7  | 12.79   | 6.45           | 57.3 | 12.18   | 5.27        | 36.8 | 8.35    |

SOURCE: D.O.T. 1954

## WINDS

The forested Mackenzie Valley is an area of light winds, frequent calms, and no clearcut dominance of wind direction. Monthly averages of wind speeds range from 2 to 12 miles per hour. Wind speeds in the vicinity of Norman Wells are slightly higher than those for Good Hope, and frequently occur during the afternoon.

## CLOUD AND FOG

Total cloud cover is low from late November to early April, and increases rapidly from April to June. From the end of June to late November cloud cover reaches its maximum, with mid-August to late November being the cloudiest season.

During the summer, fog is uncommon except over the lakes. At very low temperatures during the winter, ice-fog occurs. This is a thin fog of ice-crystals observed in and immediately downwind from settlements. The moisture is derived from the stovepipes and chimneys as a result of combustion.

TABLE 5  
GENERAL SUMMARY OF HOURLY WEATHER OBSERVATIONS 1960.

## TOTAL CLOUD IN TENTHS OF SKY COVERED (BY HOURS)

|           | 0   | 1  | 2  | 3  | 4   | 5  | 6  | 7  | 8   | 9   | 10  | Total |
|-----------|-----|----|----|----|-----|----|----|----|-----|-----|-----|-------|
| January   | 106 | 74 | 46 | 41 | 135 | 20 | 39 | 18 | 40  | 94  | 231 | 744   |
| February  | 53  | 56 | 53 | 35 | 24  | 19 | 22 | 22 | 53  | 126 | 233 | 696   |
| March     | 108 | 71 | 52 | 49 | 44  | 36 | 26 | 35 | 58  | 67  | 198 | 744   |
| April     | 100 | 87 | 56 | 47 | 46  | 42 | 31 | 52 | 62  | 95  | 102 | 726   |
| May       | 1   | 23 | 39 | 48 | 46  | 48 | 50 | 50 | 69  | 95  | 178 | 147   |
| June      | 4   | 13 | 27 | 85 | 106 | 62 | 72 | 61 | 59  | 114 | 117 | 720   |
| July      | 20  | 45 | 38 | 44 | 62  | 64 | 58 | 58 | 103 | 180 | 130 | 744   |
| August    | 8   | 25 | 38 | 55 | 60  | 39 | 54 | 41 | 65  | 174 | 185 | 744   |
| September | 16  | 21 | 29 | 37 | 38  | 40 | 41 | 37 | 50  | 139 | 272 | 720   |
| October   | 28  | 43 | 39 | 17 | 22  | 24 | 31 | 24 | 45  | 111 | 350 | 744   |
| November  | 54  | 44 | 44 | 39 | 21  | 28 | 26 | 28 | 63  | 126 | 247 | 720   |
| December  | 93  | 48 | 51 | 40 | 30  | 24 | 30 | 45 | 65  | 130 | 188 | 744   |

## NUMBER OF HOURS WITH OBSTRUCTION TO VISION

|           | 0 - $\frac{1}{2}$ mi. | $\frac{3}{8}$ - $\frac{1}{2}$ mi. | $\frac{5}{8}$ - $\frac{1}{2}$ mi. | $\frac{3}{8}$ - $\frac{1}{2}$ mi. | $\frac{1}{2}$ - $\frac{1}{4}$ mi. | $\frac{0}{1}$ mi. | Blowing<br>Dust or<br>Smoke | Haze<br>and<br>Smoke | Ice Fog |
|-----------|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------|-----------------------------|----------------------|---------|
| January   | 11                    | 34                                |                                   |                                   |                                   |                   |                             |                      |         |
| February  | 13                    | 1                                 | 1                                 | 2                                 |                                   |                   |                             |                      |         |
| March     | 4                     | 2                                 |                                   |                                   |                                   |                   |                             |                      |         |
| April     |                       |                                   |                                   |                                   |                                   |                   |                             |                      |         |
| May       | 5                     |                                   |                                   |                                   |                                   |                   |                             |                      |         |
| June      |                       |                                   |                                   |                                   |                                   |                   |                             |                      |         |
| July      |                       |                                   |                                   |                                   |                                   |                   |                             |                      |         |
| August    | 8                     | 1                                 |                                   |                                   |                                   |                   |                             |                      |         |
| September | 10                    | 1                                 |                                   |                                   |                                   |                   |                             |                      |         |
| October   | 23                    | 9                                 | 5                                 | 4                                 |                                   |                   |                             |                      |         |
| November  | 16                    | 4                                 | 4                                 |                                   |                                   |                   |                             |                      |         |
| December  | 19                    | 1                                 |                                   |                                   |                                   |                   |                             |                      |         |

## STATION INFORMATION

| Latitude<br>North | Longitude<br>West | Elevation<br>feet above m.s.l. |
|-------------------|-------------------|--------------------------------|
| ○ ,               | ○ ,               | ○ ,                            |
| 65 18             | 126 51            | 240                            |

Observations are taken at the radiosonde station which is between the airport and the settlement, on the E bank of the Mackenzie River.

## TOTAL CLOUD IN TENTHS OF SKY COVERED (BY HOURS)

|           | 0   | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8   | 9   | 10  | Total |
|-----------|-----|----|----|----|----|----|----|----|-----|-----|-----|-------|
| January   | 225 | 2  | 13 | 24 | 17 | 21 | 17 | 15 | 23  | 5   | 165 | 527   |
| February  | 208 | 17 | 8  | 19 | 17 | 14 | 14 | 14 | 26  | 17  | 166 | 523   |
| March     | 230 | 44 | 45 | 47 | 32 | 28 | 31 | 46 | 35  | 31  | 158 | 727   |
| April     | 182 | 52 | 40 | 47 | 38 | 26 | 21 | 36 | 39  | 49  | 190 | 720   |
| May       | 17  | 26 | 35 | 56 | 40 | 55 | 44 | 57 | 91  | 114 | 209 | 744   |
| June      | 25  | 45 | 61 | 59 | 54 | 43 | 52 | 85 | 124 | 118 | 54  | 720   |
| July      | 18  | 31 | 68 | 49 | 41 | 36 | 52 | 65 | 93  | 154 | 137 | 744   |
| August    | 9   | 15 | 36 | 43 | 37 | 30 | 40 | 48 | 119 | 125 | 236 | 738   |
| September | 2   | 4  | 6  | 12 | 8  | 15 | 22 | 29 | 70  | 105 | 120 | 393   |
| October   | 10  | 24 | 20 | 9  | 15 | 13 | 13 | 13 | 36  | 84  | 166 | 403   |
| November  | 37  | 24 | 28 | 21 | 16 | 13 | 10 | 15 | 34  | 65  | 127 | 390   |
| December  | 65  | 44 | 36 | 18 | 17 | 12 | 15 | 28 | 43  | 35  | 90  | 403   |

## NUMBER OF HOURS WITH OBSTRUCTION TO VISION

|           | 0 - $\frac{1}{2}$ mi. | $\frac{3}{8}$ - $\frac{1}{2}$ mi. | $\frac{5}{8}$ - $\frac{1}{2}$ mi. | $\frac{3}{8}$ - $\frac{1}{2}$ mi. | $\frac{1}{2}$ - $\frac{1}{4}$ mi. | $\frac{0}{1}$ mi. | Blowing<br>Dust or<br>Smoke | Haze<br>and<br>Smoke | Ice Fog |
|-----------|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------|-----------------------------|----------------------|---------|
| January   | 2                     | 4                                 | 11                                | 10                                | 8                                 |                   |                             |                      |         |
| February  | 4                     | 1                                 | 1                                 |                                   |                                   |                   |                             |                      |         |
| March     | 1                     |                                   |                                   |                                   |                                   |                   |                             |                      |         |
| April     |                       |                                   |                                   |                                   |                                   |                   |                             |                      |         |
| May       | 18                    | 3                                 |                                   |                                   |                                   |                   |                             |                      |         |
| June      | 9                     | 1                                 | 10                                |                                   |                                   |                   |                             |                      |         |
| July      | 14                    | 4                                 | 1                                 |                                   |                                   |                   |                             |                      |         |
| August    | 34                    | 3                                 | 12                                |                                   |                                   |                   |                             |                      |         |
| September | 9                     | 1                                 | 5                                 |                                   |                                   |                   |                             |                      |         |
| October   |                       |                                   |                                   |                                   |                                   |                   |                             |                      |         |
| November  | 8                     | 1                                 |                                   |                                   |                                   |                   |                             |                      |         |
| December  |                       |                                   |                                   |                                   |                                   |                   |                             |                      |         |

## STATION INFORMATION

| Latitude<br>North | Longitude<br>West | Elevation<br>feet above m.s.l. |
|-------------------|-------------------|--------------------------------|
| ○ ,               | ○ ,               | ○ ,                            |
| 66 05             | 118 02            | 600                            |

Station is located on the E side of Great Bear Lake, 100 ft. above and just N of Labine Bay.

The E - NE sector is sheltered by rocky ridges. Report every six hours from 0500 M.S.T. and hourly from four hours before sunrise to sunset.

## DEGREE DAYS

Some of the important aspects of the climate and physiography of the area are the effects these have on fuel consumption, for heating purposes, on buildings and transportation costs, and on the development of certain primary industries.

If winter is taken as that period during which mean daily temperatures are below 32° F, then this period lasts for seven months at all of the settlements for which climate data is available, and can be presumed to do so for Colville Lake and Fort Franklin also. Comparable periods at other points are six months at Yellowknife, five at Winnipeg and four at Montreal. When expressed in terms of heating requirements\* the number of degree days below 65° at Yellowknife is 15,600 as compared to 10,300 at Edmonton and 5,500 at Vancouver. This means that heating costs at Yellowknife are as much as 50 per cent above those at Edmonton and almost three times those at Vancouver. Both Fort Norman and Norman Wells have 16,132 fuel consumption degree days which would suggest that heating costs for the settlements in this study area would be in excess of those at Yellowknife.

## SUMMARY

Even though the climate of the area is characterised by brief cool summers and long cold winters extreme variations in temperatures occur. Temperature in excess of 80° and as low as -60° have been recorded.

With the exception of the small number of rainy days, visibility in the summer is good as low ceilings are uncommon, and fog only occurs over lakes. During the winter, snow-flurries or blowing snow create conditions of poor visibility. The season of poorest visibility occurs during the Autumn. The proportion of low ceilings increases at this season, and frequent snow-flurries reduce visibility considerably.

The long duration of sunlight during the summer months greatly influences plant growth in the Mackenzie Valley, but the retarding influences of climate and physiographic features is borne out by the paucity of the stands of merchantable timber, and the limited variety of garden and agricultural produce that can be grown to maturity in this area. The frost free period is variable and short. The mean of the duration of the frost free period over a span of forty years ranges from 53 days at Fort Good Hope to 46 days at Fort Norman.

The low average annual precipitation of 9-13 inches is another factor affecting plant growth. The average summer precipitation of 6.5 inches is a precarious total and drought has been a serious problem for gardens. Where frost in the soil is still unthawed in July, the season of peak growth, trees can derive moisture only from topmost layers of the soil, and hence a horizontal root system develops. This type of root system affects the density of the open boreal woodland. The summer melting of frozen soil allows a gradual release of moisture which produces some sub-irrigation for plant growth and partially compensates for the inadequate rainfall.

Building in permafrost areas presents problems resulting in increased construction costs which are not encountered in more temperate regions. Basically these problems arise from the thawing of ground underneath structures, the excess water content in the thawed soil due to poor drainage and the nature of the materials present in the active layers. These problems are overcome to some extent by choosing the best possible site for construction and using piles or gravel pads. These measures do, however, increase construction costs.

Climate conditions result in a seasonal water transportation system, which means higher costs to the operator, and limits the effectiveness of this system as an alternative means of cheap transportation.

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\*Degree days are the number of days with a mean daily temperature above 42°F. multiplied by the total number of degrees above 42°F. Heating is considered necessary below 65°F. Fuel consumption degree days are the number of days with a mean daily temperature below 65°F multiplied by the total number of degrees below 65°F. (Weir. 1967. pp 12-13)

## Chapter 2

### COMMUNICATION AND TRANSPORTATION SYSTEMS

#### COMMUNICATIONS

##### Radio – Telephone Communication

Prior to the opening of the telephone system in the summer of 1966, oral communication between centers had been by means of registered radio-telephone network.

All the settlements have at least one registered radio transmission service within the Roman Catholic Mission circuit. Forts Norman, Franklin and Good Hope also have the Hudson's Bay and the I.A. & N.D. circuits and with the posting of a game and forestry officer at Fort Good Hope, this settlement now has an additional circuit. The R.C.M.P. detachments at Fort Norman and Fort Good Hope also maintain a radio-telephone connection with their Regional office in Inuvik.

With the linkage of the land line to centres in the south the range of communications by telephone has been extended. At present, this system tends to be unreliable. When the problems of distance, technology, and maintenance are resolved, this form of communication will considerably lessen the sense of distance and isolation which at present characterize the communities.

An extensive discussion of the types of equipment and frequencies used by the various agencies in similar types of settlements is given can be found in the report by Higgins(1968).

Costs of telephone calls and telegrams applicable in this area are given below.

Telegrams from any point in Canada to any center in the Northwest Territories cost \$2.15 for the first 15 words and 7c for each additional word.

TABLE 6

#### Rates for Telephone Calls

| Route                        |                                  | Person<br>Person<br>For three<br>Minutes | Each<br>Additional<br>Minute. | Station/<br>Station<br>For three<br>Minutes. | Each<br>Additional<br>Minute. | Time<br>Effective  |
|------------------------------|----------------------------------|--|-------------------------------|--|-------------------------------|--------------------|
| Ottawa-Toronto-<br>Montreal. | Fort Good Hope<br>& Fort Norman. | \$8.85                                   | \$1.70                        | \$5.20                                       | \$1.70                        | 0600-<br>1800 hrs. |
|                              |                                  | \$7.15                                   | \$1.20                        | \$3.65                                       | \$1.20                        | 1800-<br>0600 hrs. |
| Edmonton                     | Fort Good Hope<br>& Fort Norman. | \$4.40                                   | 95c                           | \$2.95                                       | 95c                           | 0600-<br>1800 hrs. |
|                              |                                  | \$3.30                                   | 70c                           | \$2.20                                       | 70c                           | 1800-<br>0600 hrs. |
| Ottawa-Toronto-<br>Montreal  | Norman Wells.                    | \$8.80                                   | \$1.70                        | \$5.15                                       | \$1.70                        | 0600-<br>1800 hrs. |
|                              |                                  | \$7.10                                   | \$1.20                        | \$3.60                                       | \$1.20                        | 1800-<br>0600 hrs. |
| Edmonton                     | Norman Wells                     | \$4.25                                   | 95c                           | \$2.85                                       | 95c                           | 0600-<br>1800 hrs  |
|                              |                                  | \$3.20                                   | 70c                           | \$2.15                                       | 70c                           | 1800-<br>0600 hrs. |

### Postal Services

Contracts for the transportation of mail exist between the postal authority and the airline companies operating in the area. Mail, to and from the settlements, is transported by aircraft on scheduled flights.

As there is no scheduled air service to Colville Lake, the flow of mail is erratic and subject to delays. The post office at Fort Good Hope is the re-routing point for mail to Colville Lake, and during the winter, mail is transported, in or out of the settlement, by persons travelling to or from Fort Good Hope. In the summer, mail is sent out by whatever aircraft happens to land at the settlement. Incoming mail is subject to even longer delays as not all air traffic to Colville Lake originates from or passes through Fort Good Hope. However, every effort is made to utilize all opportunities to ensure that mail for Colville Lake gets there as quickly as possible.

With the exception of Colville Lake all other communities have a post office. At Fort Norman and Fort Good Hope these are housed at the Hudson's Bay Company store and the store manager acts as postmaster.

At Fort Franklin this service is undertaken by the Roman Catholic Missionary, and at Norman Wells the postal facilities are comparable to those of small communities in southern Canada.

### TRANSPORTATION

With the exception of Colville Lake, all the communities in the study area are serviced by both air and water transportation. During the ice-free season the communities are serviced by barge. Norman Wells is the major air transportation center from which services radiate out to the other settlements.

Transportation costs to these northern settlements are high. This is due to a number of factors. The most important of these is the absence of an alternative competitive system of low-cost year-round transportation. The high cost of construction and maintenance of a permanent all-weather road or rail system is not warranted in terms of the volume of traffic, even though the value of the waterway is limited due to the seasonality of the operation.\*

Climatic conditions render the cheapest means of transportation a seasonal one. The partial utilization of equipment, berthing and maintenance costs increases the costs of the carriers.

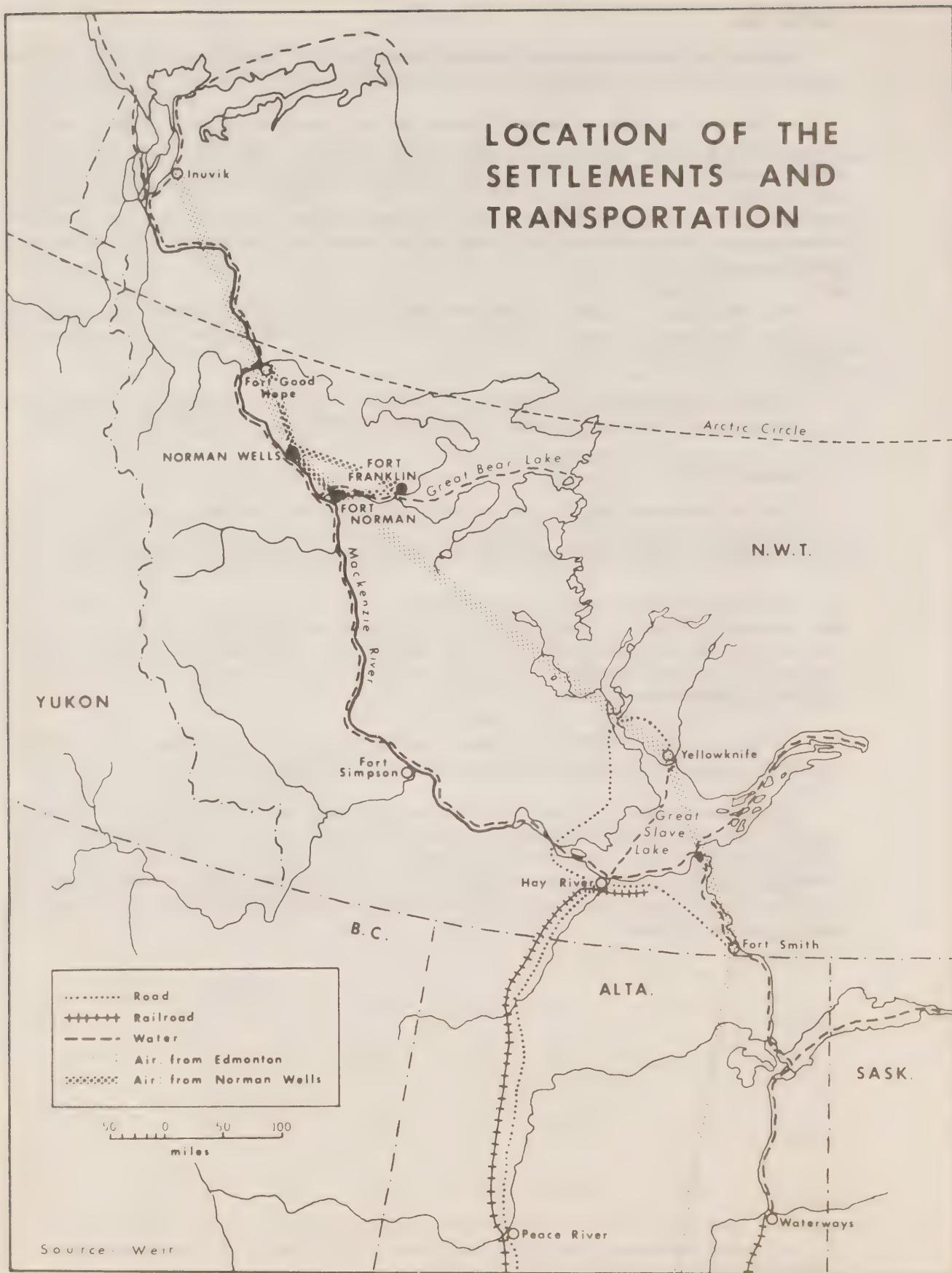
The volume of traffic to the northern settlements is relatively small due to the low level of economic activity of a small and scattered population. The under-developed economy of the north limits the amount of southbound freight and creates a directional imbalance in the volume of movement of freight. Bissett (1967) and Wolforth (1965) have made assessments of the volume and directional movement of freight. At present southbound freight consists mainly of personal effects of people leaving the north, or of equipment being shipped out for repair.

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\*For a more detailed and extensive discussion of the costs of road construction, volume and movement of freight and comparative costs see Bissett (1967.)

Figure 4

## LOCATION OF THE SETTLEMENTS AND TRANSPORTATION



### Air Transportation

The increasing use of air transportation in the north for the movement of passengers and freight has led to the formation of four major airline companies operating in the arctic and sub-arctic regions. Their fare per mile rates are comparable, but are at least one third above those charged for economy fares by major airlines operating east-west services in southern Canada. A table of comparative rates is given below.

TABLE 7

#### COMPARATIVE AIR FARE – PER PASSENGER MILE RATES 1966

| Carrier                      | Route                            | Distance<br>(miles) | Fare per<br>Mile |
|------------------------------|----------------------------------|---------------------|------------------|
| Air Canada                   | Montreal -<br>Winnipeg           | 1,250               | .06c             |
| Canadian Pacific<br>Airlines | Edmonton -<br>Whitehorse         | 1,024               | .08c             |
| Nordair Ltd                  | Montreal --<br>Frobisher Bay     | 1,303               | .09c             |
| Quebec Air                   | Montreal –<br>Schefferville      | 713                 | .09c             |
| Pacific Western<br>Airlines  | Edmonton –<br>Inuvik             | 1,300               | .11c             |
| Northward<br>Aviation Ltd.   | Norman Wells –<br>Fort Good Hope | 88                  | .23c             |
|                              | Norman Wells –<br>Fort Norman    | 44                  | .25c             |
|                              | Norman Wells –<br>Fort Franklin  | 106                 | .26c             |

Air freight rates follow a similar pattern. Freight rates from Edmonton to Norman Wells are 45.5c per ton mile, and from Montreal to Winnipeg 24c per ton mile.

Bissett (1967 p.269) has provided figures on the volume and flow of traffic at major airports which show that there are large differences between those to the north and those of southern Canada. He states that the reasons for the higher fare per mile rate for the northern air services are the much larger volume of traffic handled in the south as compared to the north, the economy of using larger aircraft, and the existence of other competitive forms of transportation. Also the east-west traffic of the south does not have the directional imbalance that occurs in the north-south flow.

The larger population centers of the western arctic and sub-arctic are serviced by commercial aircraft flying out of Edmonton. Feeder services, originating out of Norman Wells, service the smaller settlements. Air travel between the settlements at times other than those of the scheduled service is by chartered aircraft.

The flight schedules of the larger aircraft are seldom disrupted by bad weather or changes in the flights. There is a period of up to six weeks during the autumn and the spring when aircraft cannot land.

This occurs during the early part of freeze-up when the newly forming ice is of insufficient depth to support the weight of a plane, and again during the spring when the ice has not melted or dispersed sufficiently to allow an aircraft to land on floats.

Pacific Western Airlines has four scheduled DC 6 flights a week between Edmonton and Inuvik via Fort Smith, Yellowknife and Norman Wells. From Norman Wells, Northward Aviation Ltd., using an Otter aircraft, provides a weekly scheduled service to Fort Good Hope and Fort Franklin, and a bi-weekly service to Fort Norman. As yet, Colville Lake does not have a scheduled air service. Air traffic to this settlement is by charter flights.

An Otter aircraft, equipped with floats in summer and skis in winter, is used for the service to the settlements.

During the summer of 1967 a Beaver aircraft was put into service in this area by Northward Aviation in order to handle the increased volume of charters.

The following table gives the air fares and charter rates for this area. An expanded table of air fares and freight rates is given in the appendix.

TABLE 8  
AIR TRANSPORTATION, 1967\*

|                         | Source                        | — Destination    | Distance<br>Air (miles) | Cost   |
|-------------------------|-------------------------------|------------------|-------------------------|--------|
| Passenger<br>(single)   | Edmonton                      | — Norman Wells   | 951                     | 111.00 |
|                         | Norman Wells                  | — Fort Norman    | 44                      | 13.00  |
|                         | Norman Wells                  | — Fort Franklin  | 106                     | 32.00  |
|                         | Norman Wells                  | — Fort Good Hope | 88                      | 26.00  |
|                         | Fort Norman                   | — Fort Franklin  | 66                      | 20.00  |
| Air Freight<br>(c.w.t.) | Edmonton                      | — Norman Wells   | 951                     | 25.00  |
|                         | Norman Wells                  | — Fort Norman    | 44                      | 9.00   |
|                         | Norman Wells                  | — Fort Franklin  | 106                     | 15.00  |
|                         | Norman Wells                  | — Fort Good Hope | 88                      | 12.00  |
|                         | Fort Norman                   | — Fort Franklin  | 66                      | 9.00   |
| Charter                 | Norman Wells — Otter aircraft |                  | 1.00 per mile           |        |
|                         | — Beaver aircraft             |                  | 77c per mile.           |        |

\* Personal Communication from Pacific Western Airlines Ltd, and Northward Aviation Ltd.

The reduction of air fares and freight rates, or the development of an alternative system of cheap all year transportation would reduce the cost of industrial development; and the availability of a low cost fuel at Norman Wells might provide the impetus for relocation of industries in the Mackenzie Valley.

Bissett has suggested that cheaper air transportation would also promote a greater interest in southern Canada by the resident northern population, most of whom, at present, cannot afford to travel except under the auspices of a government agency. As he suggests, lower air fares would facilitate the development of the tourist trade, which in turn might provide the impetus for the small entrepreneur to develop local potential through the provision of hunting and fishing lodges which would be within the means of a larger range of the population.

### Water Transportation

The only commercial carrier on the Mackenzie River waterway is the Northern Transportation Co. Ltd., which is a crown corporation.

Freight to the north is transhipped by barges from the rail head at Waterways, Alberta or at Hay River, N.W.T. Hay River is also the terminus of freight shipped by truck from the south.

The completion of the Mackenzie Highway in 1948, linking Edmonton to Hay River, influenced the development of Hay River as a transshipment point for northbound freight. Water distances were shortened and freight rates reduced, but the reduction was compensated for by the trucking rates between Edmonton and Hay River. This is illustrated by table 9.

TABLE 9  
WATER, RAIL AND ROAD TRANSPORTATION COSTS, 1967

| Source-Destination       | Transportation | Distance<br>(miles) | Cost<br>(ton) |
|--------------------------|----------------|---------------------|---------------|
| 1. Edmonton-Waterways    | rail           | 305                 | 26.80         |
| Waterways-Fort Norman    | barge          | 1108                | 46.00         |
| Waterways-Fort Franklin  | barge          | 1185                | 75.00         |
| Waterways-Norman Wells   | barge          | 1159                | 48.00         |
| Waterways-Fort Good Hope | barge          | 1279                | 51.00         |
| 2. Edmonton-Hay River    | rail           | 706                 | 26.40         |
| Hay River-Fort Norman    | barge          | 540                 | 26.00         |
| Hay River-Fort Franklin  | barge          | 617                 | 63.80         |
| Hay River-Norman Wells   | barge          | 591                 | 26.00         |
| Hay River-Fort Good Hope | barge          | 711                 | 31.40         |
| 3. Edmonton-Hay River    | truck          | 707                 | 67.90         |

Freight rates are also affected by the amount of additional handling that is required in the process of rerouting. Freight to Fort Franklin has to be unloaded and portaged around the St. Charles Rapids on Great Bear River before it can be reloaded on to barges for transportation across the lake. These charges are reflected in the higher freight rates to this settlement.

Colville Lake is not serviced by the barge system and, due to the fact that there is no scheduled air services to Colville Lake, any freight for the settlement must either be transported by dog team in the winter or carried by the good offices of who ever is chartering an aircraft into the settlement. The cutting of the winter road in the winter of 1966 has facilitated access. But it is questionable whether it will reduce freight rates to any appreciable extent, as the freight must be handled by private contractor, and comes in insufficient quantities to compete favourably with transportation of bulk from Yellowknife by Bristol aircraft.

Even though the volume of freight to the Central Mackenzie is low, the following table, giving the tonnage of freight shipped to selected points, indicates that a large amount of the freight shipped in this area originates there. Oil and petroleum products are shipped to the settlements from Norman Wells.

The high tonnage figures of 1965 to Fort Good Hope and Norman Wells are accounted for by the materials that were brought in for the construction of two government buildings. Oil exploration equipment was also shipped in from Norman Wells.

TABLE 10  
TONNAGE OF FREIGHT SHIPPED BY BARGE 1965 and 1966

| Source       | Destination      | Tonnage |      |
|--------------|------------------|---------|------|
|              |                  | 1965    | 1966 |
| Hay River    | — Fort Norman    | 245     | 438  |
|              | — Norman Wells   | 1,846   | 751  |
|              | — Fort Good Hope | 1,819   | 483  |
| Norman Wells | — Fort Norman    | 498     | 601  |
|              | — Fort Good Hope | 1,549   | 621  |

#### Roads

An exhaustive discussion on the costs of construction and maintenance of roads in the Mackenzie District has been given by Bissett, and his remarks on the constraints placed on the development of road systems are applicable to this area. For the purposes of this report, very general and brief descriptions will be given of the roads in the settlements.

The responsibility for the provision and maintenance of roads in the settlements (with the exception of Norman Wells) is undertaken by the Department of I.A. & N.D. The Imperial Oil Co. of Canada Ltd. has developed and maintains the road system at Norman Wells. This community has the best-constructed and most extensive road system, and the greatest number of motor vehicles in the area.

Of the other settlements, Colville Lake has, as yet, no road system at all. Footpaths develop according to usage. Forts Norman, Franklin and Good Hope all have gravel roads of varying lengths and quality. Those at Fort Franklin are the shortest and least well made, while the roads at Fort Good Hope are rapidly being extended and improved. Fort Norman has the longest most serviceable road system, and of the three, it also has the largest number of motor vehicles. In times of heavy rainfall or during the peak run-off period at break-up, roads in all three of the settlements become nearly impassable.

At an estimated cost of \$2,000 per mile for unsurfaced roads, and a minimum of \$15,000 for surfaced roads the following figures are an approximate evaluation of monies spent on road construction.

|                |           |
|----------------|-----------|
| Colville Lake  | \$—       |
| Fort Good Hope | \$ 6,000  |
| Fort Norman    | \$ 10,000 |
| Fort Franklin  | \$ 3,000  |
| Norman Wells   | \$150,000 |

A winter road linking Colville Lake and Fort Good Hope is in the process of completion. The expenditure on this road, to date, has been \$10,000.

#### OTHER TYPES OF TRANSPORTATION

In the past the only means of transportation had been by canoe or by dog team. With the increasing availability of commercially operated aircraft the distances travelled by these two means has gradually been reduced. The more recently introduced tracked vehicles such as the Bombardier and Nodwell are beyond

the means of the local people and are the property of various government agencies. But the smaller less expensive ski-doo type vehicle is gradually gaining in popularity as a means of winter transportation.

### Canoes

The factory-manufactured canoe has replaced the former birch bark, and hunting canoe, and the skin boat of the Mountain People who travelled the rivers to the west of the Mackenzie. The most common type of canoe in use at present is the 18-22 foot "V" stern freighter, with a 10 to 18 HP outboard motor.

Canoes vary slightly in price from one settlement to another, but the approximate price for a new craft bought locally is \$275.00. A new 10 HP motor costs around \$435.00 and a 18 HP motor \$545.00. Gasoline and oil for use in these motors sells at approximately 85c per gallon and 75c per quart respectively, in the settlements. The price of gasoline at Norman Wells is almost half of this, and at Colville Lake the price is considerably higher than that paid at the settlement.

### Tracked Snow Vehicles

The Bombardier Snowmobile is predominantly used for the pick-up and delivery of freight and passengers at the aircraft landing site, and as a means of transportation within the settlement. But periodically they are used for inter-settlement travel or for transporting a family to a nearby camp-site. At Fort Franklin, where there is no Bombardier, a Nodwell is used for the same purposes.

As these vehicles are owned by a government agency, travel between settlements of local government personnel, when necessitated, is by aircraft so as to avoid long absences from the settlement of domicile. The age and reliability of some of these vehicles does not permit their use for long-range travel.

The number of ski-doos in use are 4 at Fort Franklin, 9 at Fort Norman and 5 at Fort Good Hope. The greater proportion of these vehicles are owned by the white population, but demands for them by the Indians and Metis are increasing. At present these machines are predominantly used for travel within the confines of the settlement or for short distances, such as to visit fish nets.

### Dog Teams

Dog teams are still an integral part of the transportation systems in this area, and almost every household in a settlement has a team of five to six dogs.

During the winter, most of the long distance travelling done by the Indians and Metis is between their trapping area and a settlement, or when out hunting, and this is done by dog team.

If however, a team is not used as an item of capital investment but merely maintained through habit or as a prestige symbol its economic value is considerably reduced. If the animals are fed country food their upkeep requires little more expenditure on the part of the owner than is already costs him in the procurement of fish or game. But at three of the settlements dogs are fed a high proportion of commercial dog food that is an added expenditure and constitutes a luxury spending if the team is not used to further the economic stability of the owner.

The following table shows the average yearly expenditure on dog food at an average cost of 69c per package.

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TABLE 11  
AVERAGE YEARLY EXPENDITURE ON DOG FOOD, 1966

| Settlement     | Packages sold<br>in one year | Number of<br>dog teams | Number of<br>packages<br>per team | Average<br>yearly<br>expenditure<br>per team |
|----------------|------------------------------|------------------------|-----------------------------------|--|
| Fort Good Hope | 4221                         | 47                     | 89                                | \$61.41                                      |
| Fort Norman    | 5200                         | 34                     | 152                               | 104.88                                       |
| Fort Franklin  | 3582                         | 45                     | 79                                | 54.51  |
| Colville Lake  | nil                          | 17                     | —                                 | —  |

The working sled dog is fed one to two fish a day depending on the size of the fish, and it has been estimated that the average working sled dog requires 1,350 pounds of fish to see it through from freeze-up to open water. With a trapping season of approximately 215 days, the trapper requires a considerable number of fish to feed his team.

At present, with the small amount of wage employment available in the area, the time and energy expended on maintaining a dog team is of little concern to the Indians. With the increase of employment opportunities the, as yet, only sporadic awareness of the economics of maintaining a dog team and its relationship to lost wage-labour income should become more obvious. The availability of a relatively cheap form of alternative transportation such as the ski-doo type vehicle, that can be individually owned and maintained, should see the gradual extinction of the use of dog teams as a means of transportation.

In summary, it would appear that communication and transportation systems to most of the settlements are improving rapidly. With the exception of Colville Lake, regular postal and air services have been established to all of the settlements, and with technological improvements the telephone service should provide as reliable a means of communication as is found elsewhere.

Norman Wells, as the largest and most strategically situated community is the best served by all these systems.

### Chapter 3

#### NATURAL RESOURCES

##### Introduction

A brief introductory discussion is necessary to isolate the resources that are of importance to the people of this area. For the purposes of this report only those land animals, birds and fishes of economic or domestic importance will be touched upon.

The principal divisions into which the treatment of the resources will be divided are those of renewable and non-renewable resources, with sub-categories as to distribution and harvesting.

In the Northwest Territories, the Ordinances and Regulations affecting the harvesting of fauna have been based on the preservation of the species, and the right of the Indian to fauna to feed himself and his family. But this involvement in the Indian's way of life did not occur until the fur trade was well established, and the trading of fur had assumed an avenue of economic importance to the people. Changes, and additions of regulations regarding harvesting, must continually be evaluated in terms of the needs of the

Indians for country food and income from trading fur, together with the capacity of the faunal species to maintain their populations at a desirable level.

A great deal of work has been done by the Canadian Wildlife Service and the Fisheries Research Board to evaluate the faunal resources and to preserve the populations of species. Their continued research into the ecological relationships will undoubtedly bring about changes that will affect the utilization and exploitation of these.

The enforcement of game and fishing regulations was initially the responsibility of the Royal Canadian Mounted Police and Area Administrators. But enforcement was virtually an impossible task due to the size of the areas, and to the press of other duties impinging on these personnel. The introduction of fisheries and game management personnel has led not only to a greater amount of supervision, but also to the provision of a locally based resource individual who can provide technical and financial assistance.

## ORDINANCE AND REGULATIONS

### Government of the Northwest Territories

Those Indians over the age of sixteen who wish to trap and hunt are issued a General Hunting Licence free of charge. With it goes the obligation of keeping a tally of all species of game taken.

|  |  |
|--|--|
| Moose, Caribou,<br>Black & Grizzly Bear<br>Mountain Goat &<br>Mountain Sheep | These animals may be hunted at any time of the year. There is no limit prescribed as to the number of kills, but the hunter must utilize all parts of the animal considered fit for human consumption. Males and females over one year of age may be taken.  |
| Fur-bearing animals<br>— except Beaver                                       | There is no limit set on the numbers that may be harvested, but these animals may only be hunted or trapped during the open season 1 November — 28th February.   |
| Beaver   | The open season for Beaver in Game Management Zones 1, 7 to 9 and 11 to 17, is from October 15 to May 25, and for Zones 18 to 27 from October 15th to June 5. A special licence is issued for the hunting or trapping of Beaver. This requires that the Hunter/Trapper has a minimum of three Beaver lodges in the area being harvested. The limit set, is 1 beaver per lodge. |
| Grouse, Partridge,<br>Prairie Chicken &<br>Ptarmigan                         | No limits on numbers. The open season is from September 1st to April 30th.   |
| Migratory Birds  | May be hunted only during the open season (September 1st-October 31st). Limit 25 ducks and 15 geese daily. Applicable to all residents of the Northwest Territories.   |

### Federal Government

Fisheries Acts and Regulations, and the protection of animals that have been declared by the Governor General in Council to be in danger of extinction are under the jurisdiction of the Federal Government.

### Hunting and Fishing by Whites — Resident, Non-Resident & Alien

Provisions have been made in the various Ordinances, Acts and Regulations to permit these individuals to hunt and fish to a limited extent.

Licencing fees and quotas vary with the above categories. Information can be obtained from current literature. The following is a sample as applicable to non-resident Canadian Citizens.

|   |  |
|---|--|
| Big Game Hunting<br>in Zones 12 and 19.               | Licence fee \$100.   |
| Black Bear &<br>Grizzly Bear                          | One of each over the age of one year, unaccompanied by cubs.   |
| Moose, Mountain<br>Sheep, Mountain<br>Goat, & Caribou | One male of each, over the age of one year.  |
| Char & Lake Trout                                     | A limit of five of each per day is allowed. The Licence fee is: residents \$1.00; non-residents and aliens \$2.00. |

## Part I

### NONRENEWABLE RESOURCES – Distribution

Oil and minerals have been extensive enough in the Central Mackenzie region to develop and market profitably. As early as 1910, claims had been staked on the Great Slave Lake area southwest of Resolution. During 1914 a number of oil and gas locations were identified on the south shore of Great Slave Lake, and from 1916 to 1918 there was more activity in staking and recording of claims in the Great Slave Lake area.

#### Oil & Gas

In 1919 the range of explorations for oil and minerals was increased, and oil companies sent drilling crews down the river. Reports concerning the results of these exploratory activities created a minor rush of prospectors to the area, immediately north and west of Fort Norman. The finding of oil and the subsequent development of the deposits had a far-reaching effect on the development of the Mackenzie District. The economic basis of large sections of the area shifted from trapping and fur trading to the extractive industries.

The oil industry provided the necessary cheap fuel that was to enable the mining industry in the Great Slave Lake and the Great Bear Lake regions to develop in the 1930's. The development of markets for oil products in the form of motor vehicles, electric generators, outboard motors, aircraft, and in central heating, all contributed to the development of a demand for a local supply of fuel. This in turn permitted the modernization of transportation facilities which the mines required and also developed the production of electricity and heat which were vital to mining in the north.

The Canol Agreement between Canada and the United States in 1942 greatly increased the development of the Norman Wells oil fields. By the end of the summer of that year 2,000 troops of the United States Corps of Engineers had entered the Mackenzie District and by 1943 these men had constructed more transportation facilities than ever had been constructed in the history of the region. All weather air fields were constructed at Fort Smith, Resolution, Simpson, Wrigley, and Norman Wells. Roads were improved and extended from Grimshaw to Hay River and Fort Smith. From Norman Wells, a 4 inch pipe line and a road were constructed to Whitehorse. Communications were improved and extended when the Royal Canadian Signal Corps established radio stations at Fort Norman and Norman Wells. After the cessation of hostilities in 1945 the maintenance of the pipelines and the Whitehorse refinery were not a profitable enterprise, and the Norman Wells oil field reverted to its former role of supplying the requirements of the Mackenzie District.

### **Mining**

After an extensive exploratory programme in the 1920's, Eldorado Gold Mines Ltd., began work on their Port Radium Mine in 1931. In the following year two shafts were sunk and mining began in earnest. Ore was shipped to the Company's refinery at Port Hope in Ontario for the extraction of radium from pitchblende. In 1933 a mill and gravity reduction plant was set up and the concentrates produced were shipped out for further processing.

Wartime restrictions began to affect the availability of manpower, equipment and supplies, and the mine was shut down in July, 1940. To meet the increasing demand for uranium, the mine was reopened in 1943. The following year it became a Crown company under the name of Eldorado Mining and Refining Limited. Mining operations continued until reserves were exhausted and a shutdown became necessary in September 1960.

In 1964, Echo Bay Mines Ltd., commenced production at their site which is adjacent to the Port Radium mine. With the acquisition of the mill from Eldorado, this company is also shipping concentrates with a high content of silver and copper. A third level audit is being driven and in addition to the continuing values of the other minerals, pitchblende is being encountered.

## **RENEWABLE RESOURCES – Distribution**

### **Vegetation**

The study area is situated in the boreal forest region of the continent. In the Mackenzie Valley area the coniferous forest is composed mainly of black and white spruce. Poplar, birch, alder and willow are also present. Mosses and lichens in mats several inches thick are found at ground level. On both the banks and alluvial islands along the Mackenzie there are stands of merchantable spruce timber, but inland, to the north and east, tree growth becomes more sparse and stunted. Edible wild berries are found all along the river system.

### **Game Birds**

Ptarmigan, ducks and grouse are fairly plentiful. Geese are apparently more commonly taken in the fall. At Colville Lake many of the smaller islands contain large numbers of nests.

### **Fish**

The fish most commonly caught in the Mackenzie River and local lakes and streams are Arctic grayling, herring, whitefish, trout, pike, inconnu, suckers and loche. During the summer, fish forms the basis of the diet for the people of the area, but less fishing appears to be done at present, either for human or canine consumption. The tending of nets varies from daily to once a week. The average appears to be a lapse of two to three days between visits to nets.

### **Caribou**

There are two herds of barrenland caribou in the vicinity of Great Bear Lake. Estimates of the size of these herds were made in 1949, 1955 and 1967. The most recent survey indicates that after a period of decline in 1955 the barren ground caribou population in this area has more than doubled in size. The herd north of Great Bear Lake has risen from an estimated population of 5,000 in 1955 to 19,000 in 1967, and that to the east of Great Bear Lake has increased from 59,500 to 144,500 during the same period.

Both of these herds migrate in a predominantly east-west direction. The northern herd passes through the Colville Lake area on both its migrations. Strays from this herd are taken by the Fort Good Hope

people. The Rae herd, to the east of Great Bear Lake, has in recent years migrated past the southern shores of the lake to pasturage that extends from the southern shores of Great Bear Lake to as far south as Willow Lake River. During the migrations, animals from this herd are easily accessible to the residents at Fort Franklin.

#### Moose

These animals are found throughout the Mackenzie river system, particularly in the Mackenzie Mountains and in the vicinity of small lakes and along the streams tributary to the main river. They are most plentiful at a time when the caribou have migrated north and afford a welcome addition to the summer diet of fish.

#### Other Game Animals

Rocky Mountain goats, Dall sheep, and grizzly bear are also taken in the Mackenzie Mountains. Black bear are common.

Rabbits are plentiful in the region, and are an important source of food when other game animals are scarce. Arctic hare are also snared and eaten.

#### Fine Fur Resources

Marten form the basis of the earnings from fur sales. Not only are they found in quantity but they command a relatively high price per skin in comparison to other species. The peak trading period for these furs is reached in December and the volume then gradually tapers off until April.

Beaver and muskrat are taken during the early spring when they can be most easily shot from a canoe. These skins are traded predominantly during May and June. Muskrat pelts are in their prime during the period of break-up but beaver fur have begun to decline in quality, and are of less value due to being taken late in the season.

Wolf and wolverine are also found in the area but due to superstitions concerning these animals they are avoided. If trapped accidentally the animal is killed and the carcass disposed of according to native custom. Seldom is the fur traded.

## Part II

### NON-RENEWABLE RESOURCES — Utilization

#### Mining

Figures on the production of the Port Radium mine from 1943 are still regarded as classified information, and with the closure of the mine other data is of little relevance to the present survey.

The following table gives the Silver production for Echo Bay Mines Ltd., for the year 1965.

TABLE 12\*

#### SILVER PRODUCED, ECHO BAY MINES LTD., 1965\*

| Period      | Tons Milles | Grade<br>Daily Rate | Grade<br>(oz, Ag/ton) | Est. Production<br>(oz. silver) |
|-------------|-------------|---------------------|-----------------------|---------------------------------|
| 1st Quarter | 7721        | 86                  | 34.3                  | 264,915                         |
| 2nd Quarter | 8738        | 96                  | 33.2                  | 289,645                         |
| 3rd Quarter | 9664        | 105                 | 38.2                  | 369,779                         |
| 4th Quarter | 9486        | 105                 | 51.0                  | 483,906                         |

\*Thorpe, 1965.

During 1965, production was 35,609 tons of ore for an average daily rate of 98 tons. The average grade of ore was 39.5 ounces per ton. Production in 1966 was at a rate of 121 tons of ore per day. Metal content in concentrates produced in the two years was:

|      | Silver (oz.) | Copper (lbs)* |
|------|--------------|---------------|
| 1965 | 1,408,245    | 974,394       |
| 1966 | 1,573,752    | 1,644,222     |

The average number of men employed was 74 in 1966, and 64 in 1965. After the initial period of exploration and development, the number of Indians employed at the mine from the settlements became progressively less. At present there are no Indians from the settlements in this survey area employed at the mine.

### Oil

Crude oil from the wells at Norman Wells was first marketed in 1921, but it was not until 1932 that production and refining became economically feasible and the wells were re-opened. The "Canol" agreement between Canada and the United States in 1942 called for the greatly increased development of the oil field, and the construction of a 595 miles pipeline and all-weather road from Norman Wells to Whitehorse. Since 1956, the refinery has operated on a year - round basis. Some figures on the quantities and value of products are given below.

TABLE 13

PRODUCTION AND VALUE OF CRUDE OIL, NORMAN WELLS 1950-1960

| Year | Production (barrels) | Value (\$) |
|------|----------------------|------------|
| 1950 | 189,472              | 188,164    |
| 1951 | 287,717              | 208,867    |
| 1952 | 351,632              | 246,838    |
| 1953 | 329,508              | 355,032    |
| 1954 | 369,887              | 373,283    |
| 1955 | 405,219              | 404,235    |
| 1956 | 449,409              | 420,842    |
| 1957 | 420,844              | 387,192    |
| 1958 | 505,320              | 455,050    |
| 1959 | 459,654              | 424,627    |
| 1960 | 497,421              | 436,805    |

TABLE 14

VALUE OF REFINED PRODUCTS, NORMAN WELLS 1962-1965

| Year | Value in Thousand Dollars |                      | Total |
|------|---------------------------|----------------------|-------|
|      | Saleable Products         | Consumed at Refinery |       |
| 1962 | 2,734                     | 209                  | 2,943 |
| 1963 | 2,312                     | 198                  | 2,521 |
| 1964 | 2,100                     | 209                  | 2,298 |
| 1965 | 2,734                     | 209                  | 2,655 |

\* Mining in the North Dept. of I.A. & N.D. 1967.

The value of refined products produced at Norman Wells reached a peak in 1962 and declined until 1964 but made a slight recovery in 1965. The company received \$2,734,000 from the sale of 498,000 barrels of refined products in 1965.

Population characteristics, labour force and employment at Norman Wells are discussed further when dealing with the individual settlements. However, it might be mentioned here that a few of the Metis of the region have obtained permanent employment with I.O.L., and that there is some seasonal demand for unskilled labour which is eagerly sought after by the indigenous population.

### RENEWABLE RESOURCES – Harvesting

#### HUNTING

##### Big Game and Game Birds

Three big game outfitters have established camps in the Mackenzie Mountains to which hunters are flown, from Norman Wells or Whitehorse. Statistics are unavailable as to the numbers of animals taken by the sport hunters, or of the Indians employed as guides who were residents outside the area.

The figures given below include the number of caribou taken during the government-sponsored community hunts that were undertaken during March and April at Forts Franklin, Norman and Good Hope. These yielded returns of 100, 85 and 98 caribou carcasses respectively.

TABLE 15

##### Big Game and Game Birds Taken in 1966.

| Settlement.    | Moose | Caribou | Mt. Sheep | Black | Bear | Ptarmigan | Wild Goose | Ducks | Grouse |     |
|----------------|-------|---------|-----------|-------|------|-----------|------------|-------|--------|-----|
| Norman Wells   | 8     | 2       | —         | —     | —    | 1         | 125        | 31    | 50     | 25  |
| Fort Norman    | 96    | 141     | 3         | 20    | —    | —         | 206        | 40    | 479    | 220 |
| Fort Franklin  | 88    | 246     | —         | 12    | —    | —         | 586        | 88    | 797    | 437 |
| Fort Good Hope | 84    | 103     | —         | 12    | —    | —         | 210        | 76    | 714    | 99  |
| Colville Lake  | 32    | 347     | —         | 2     | 1    | —         | 187        | 35    | 472    | 24  |

Source: Game Management Records for the Year July 1965 to June 1966.

The figures for Fort Franklin are markedly deficient as 38 per cent of the General Hunting Licences issued were not returned. A table of the number of licences issued and used is given in the appendix.

With the exception of Norman Wells, the traditional economy of the indigenous people has been a hunting-fishing-trapping economy. With the introduction of trade, and the increasing availability of money through wages and allowances, changes have occurred in these subsistence patterns that are particularly noticeable in regard to hunting.

Today there appears to be an eagerness for wage employment, with an increasing dependency on money to provide variations in diet, and to replace or acquire, equipment and clothing. Summer construction jobs, positions as guides and whatever casual or permanent labour is available, is sought after by the men. Some individuals migrate to the larger centres of Inuvik or Yellowknife to look for employment. At Colville Lake the search for summer wage employment appears to extend only as far as Fort Good Hope where relatives or friends will act as hosts.

The sporadic and relatively unpredictable demands for casual labour, and the existence of the fresh meat obtained during the winter hunts appears to have reduced the incentive of hunters to go out looking for game. In this context Weir (1967) states that:

"Whenever the Indians leave a settlement they always take their rifles and whenever a moose, caribou or bear is sighted it is immediately shot. Consequently, much of the food supply is obtained in this manner although the expressed purpose for a trip is not hunting".

It was found that most of the journeys undertaken during the summer by the Indians were for reasons other than hunting, which had become incidental to other activities.

When the figures in table below are viewed in terms of the number of adult males, or of households in a settlement, and deductions made of the animals taken during the spring hunt, the amount of hunting done would appear to be low for all the settlements except Colville Lake.

TABLE 16  
AVERAGES OF MOOSE AND CARIBOU TAKEN 1966

|                        | FORT GOOD HOPE | FORT FRANKLIN | FORT NORMAN | COLVILLE LAKE |       |         |       |         |
|------------------------|----------------|---------------|-------------|---------------|-------|---------|-------|---------|
|                        | Moose          | Caribou       | Moose       | Caribou       | Moose | Caribou | Moose | Caribou |
| Per household          | 1.5            | .09           | 1.7         | 3.2           | 2.3   | 1.3     | 1.8   | 20.4    |
| *Per adult male hunter | 1.4            | .07           | 1.4         | 2.7           | 2.3   | 1.3     | 1.4   | 15.0    |

\*These figures are based on the number of licences returned showing a game take.

### TRAPPING

The onset of freeze-up limited the amount of fishing that could be done, and groups dispersed to hunt and trap. The dependence of the Indians on game and on fur bearing animals to provide food and items of material culture, and the constraints on the procurability of these animals were some of the factors affecting the size of group formation and the degree of mobility to which they were subject. But the geographical mobility of groups was a feature of winter activities.

The introduction of game ordinances has to some extent restricted the trapping period. At present the trapping season opens on the first of November for most fur-bearing animals. The season for Beaver opens approximately two weeks later.

In order to obtain supplies and equipment for a season in the 'bush', most trappers receive a certain amount of credit from the Hudson's Bay Co. Repayable loans are also available from government agencies. This system, while increasing the earning potential of the trapper, rarely allows the individual to clear debts and become self-financing.

With the introduction of the toboggan and the development of a larger breed of dogs, travel by dog-team became the established mode of winter travel. At present, the predominant means of transportation to a winter camp is either by canoe, or by dog-team after freeze-up. With the increasing availability of aircraft in recent years, some trappers have used summer earnings to charter aircraft to transport themselves and their families out to a trapping area. Through the use of aircraft there is a saving in time spent travelling, and there is a considerable gain in the amount of equipment that can be transported. These however, are offset unless the trapper intends to remain in the trapping area for the whole season. If he decides to change trapping areas he might have to discard much of his equipment if travelling by dog-team, and if, through the use of aircraft, he has gone further from the settlement than is his normal practice, the extra time spent travelling to and from the settlement negates the original gain in time saved.

The length of time a trapper stays away from the settlement varies considerably. Some tend to go out early in the fall and stay out for long periods. Others make frequent returns to the settlement to exchange fur and replenish stores. However, all trappers return for Christmas and appear to spend at least two weeks in the settlement before returning to their trapping camps or setting out to a new trapping area. Again, the length of time that the trappers stay out during the second period varies, but most trappers appear to have returned to their settlements by the end of March or beginning of April and set out anew, from the middle of April, on the beaver hunt.

While out at a hunting-camp the men have to do a certain amount of hunting and fishing to keep themselves, their families and their dogs supplied with food, as they would rarely be able to take with them more than the basics such as: flour, lard, sugar and tea. Whether a supply of fish has been laid up in the fall or not, it is usually not enough to last the winter, and some fishing has to be carried out by chopping holes in the ice and setting nets under it. The carcasses of some trapped animals are used for dog food trappers supplement their own diet with hares, ptarmigan and game.

There are no registered traplines in this region, and there appears to be no individual claims made to particular areas. Cabins had not been built in the bush for a decade prior to the summer of 1967, when through the instigation and assistance of the Game Management Branch, three families from Fort Franklin decided to spend the winter at Lac Ste Thérèse.\*

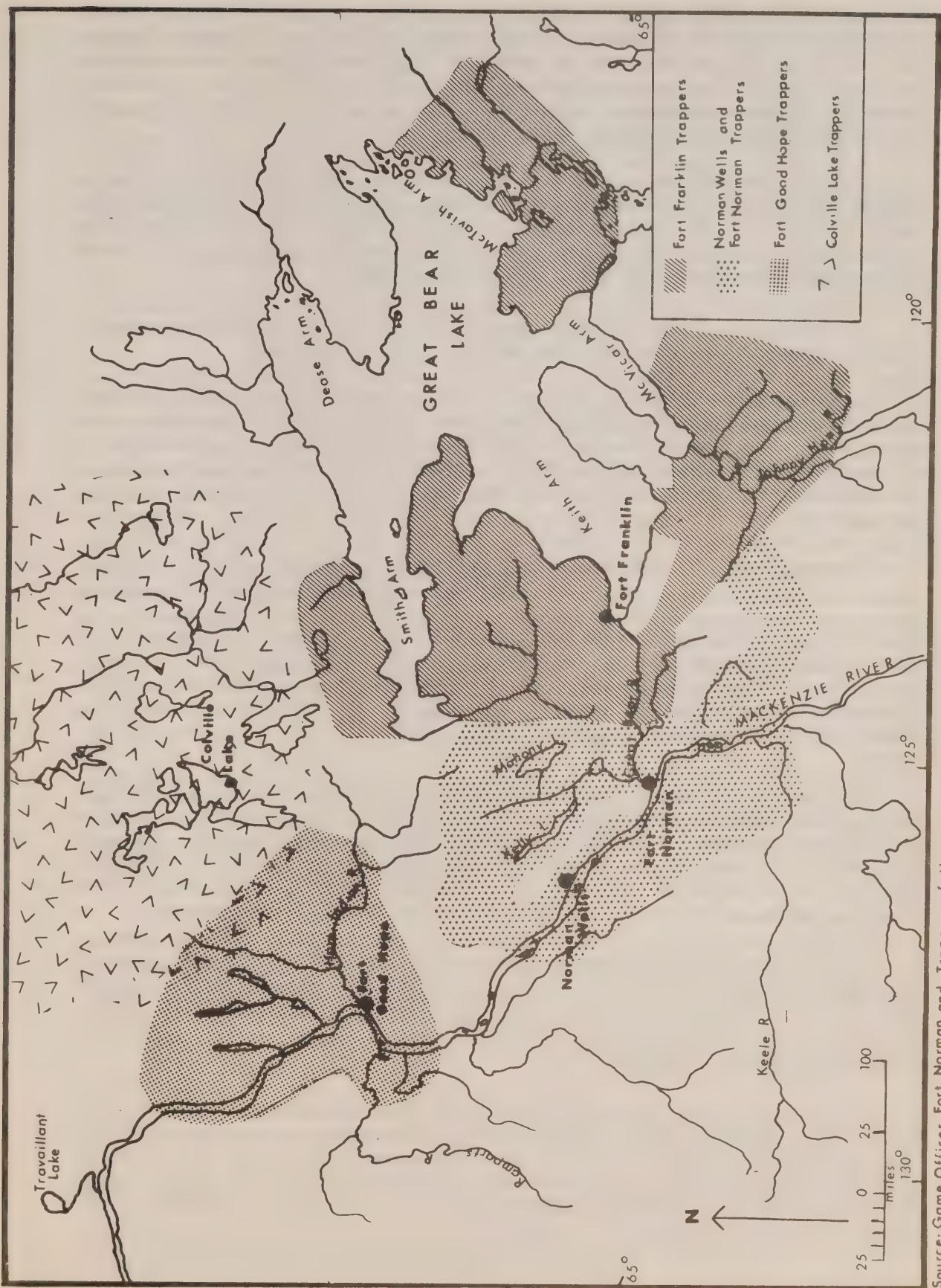
The choice of trapping area is an individual preference and in at least one settlement, the choice is apparently influenced by divination (scapulomancy). Some recognition of group territorial rights is manifest by the fact that Indians from other settlements have to obtain permission from the local band chief to reside in the community, or to trap in the locality.

Figure 5 shows the extreme limits of areas trapped, but overlap occurs in all instances as trappers getting further away from their own settlements are likely to come into closer proximity to each other. This is particularly evident in the area between Colville Lake and Fort Good Hope which is territorially considered to be the prerogative of both groups.

This weakly developed concept of individual territorial rights could be a factor inducing a low personal investment in the choice and use of a winter locale. There is less incentive for a trapper to improve his area through better trapping practices, and the provision of a greater degree of comfort for himself. The absence of a trapping cabin further reduces the trapper's sense of permanency and the need to trap repeatedly in a given area. The low commitment to a trapping area enhances the transient nature of the activity and the relative discomfort in relation to his life in the settlement. Both could be factors contributing to an individual's, preference for the conveniences and permanency of life in the settlement to the impermanency and social isolation of the trapping camp.

\*There are six individually owned cabins at Bracket Lake in the vicinity of Fort Noman, and numerous abandoned cabins in the Mackenzie Mountains. The Indians at Fort Good Hope and Fort Franklin do not maintain winter cabins but use the unclaimed cabins that are habitable if one is situated in the area in which they are trapping.

Figure 5  
AREAS TRAPPED 1966-1967



Source: Game Officer, Fort Norman and Trappers of the areas.

One direct result of the absence of individual ownership of trapping areas is that the trapper is free to change his locale at any time. The practice of changing trapping areas is one that is indulged in during the post-Christmas period by the trappers of all settlements. It does mean, however, that the individual intending to change his trapping area must haul his equipment back to the settlement and set out afresh. It appears that this process was a tiresome one, and that it was not unusual for the trapper to discard much of his equipment rather than have the trouble of hauling it home.

Perhaps the combined forces of impermanency, social isolation and discomfort are factors inducing other patterns of activities. These could take the form of more frequent returns to the settlement and a greater reluctance to return to the trapping grounds. An outcome of this could be a shrinkage in the distance travelled from the settlement with the result that the area immediately surrounding the settlement becomes more intensively trapped and results in a lower yield per trapper.

The lessening of the reward for the expenditure of energy involved may, in turn, affect the motivation to trap at all, and create a greater dependency on other sources of income.

There appear to be two distinct areas that are trapped by the Fort Norman people. One is on the west bank of the Mackenzie within a radius of approximately 100 miles of the settlement, and the other on the east bank and in the Mackenzie Mountains. Those who consider themselves Mountain People trap exclusively in the mountain areas while those who are considered to be other than Mountain People trap on the west side of the Mackenzie. When changes of trapping areas occur they do so within these given groupings.

At Fort Good Hope the trapping area extends to the major lakes within the vicinity of the settlement. Trappers have been known to go as far as Travallant Lake and the Anderson River, but the preference seems to be to remain within a radius of 100 miles or so of the settlement. Even though trappers at Fort Good Hope take their wives and families with them to their winter camps, there are no permanent winter cabins as these people also change their trapping locales according to the productivity of the area. A number appear to follow the Mackenzie River within a distance of 30 to 40 miles. Some travel north of the Hare Indian River towards Colville Lake and it is not unusual for trappers from Fort Good Hope and Colville Lake to meet and trap together during the winter season.

Similar patterns of changing a winter trapping area exist also at Colville Lake where there is again an absence of winter cabins. The people from this area tend to trap within a larger radius from the settlement. A few families trap the area west and southwest of Colville Lake and on these occasions have met trappers from Fort Franklin. Periodically, Fort Franklin people who are trapping the northwest shore of Great Bear Lake will go up to Colville Lake to visit, sell furs, or re-provision. Overlap of trapping areas occurs all through this region except on the west side of the Mackenzie River where the Mountain People trap.

The areas most extensively trapped by the Fort Franklin people have been to the north, south south-east and south-west of the settlement. A few have ventured as far as the east shore of Great Bear Lake, and in the last few years an increasing number have trapped along the north shore of Smith Arm. Changes in regard to winter trapping groups have occurred to affect not only the size and structure of these groups but group interaction processes.

The availability of Social Assistance, Social Security and Disability Allowances has reduced the need for the elderly and disabled to have to participate in trapping activities in order to maintain themselves. There are a few elderly people who do trap, and go out to winter camps, but by far the largest number of them set their traps within easy reach of the settlement. The size and composition of trapping groups has altered to the extent that few elderly and disabled persons go out to a winter camp. The effects of these

changes on group interaction processes are beyond the scope of this report. Another change that occurred in trapping group structure and size that will only be discussed in so far as it affects the economic processes, is the development of a pattern of trapping partnerships.

Osgood's statements regarding the trapping and residence patterns of the Satudene were found to have been patterns that had existed among the other tribes in this study area. The previous pattern of nuclear or extended family households trapping as discrete units, or in small groups with other families, is still the prevailing pattern at Fort Good Hope, Fort Norman and Colville Lake. At Fort Franklin a pattern of male trapping partners has developed that is beginning to appeal to the people of the other settlement.

At Fort Franklin the men only go out trapping. They leave the women and children in the settlement. The reason given for this by the men is, that they feel that they can travel further and faster unhampered by women and children. This also requires less provisioning and leaves room in the canoe for another male partner and his equipment.

Trapping partnerships are formed between men on the basis of kinship and/ or friendship relationships. These partnerships appear to be quite flexible and are subject to change at any time during the trapping season. If changes do occur, they appear to do so in January when the trappers are due to go out again. Changes of trapping partners apparently occur even when father and son trap together, if the son can find someone else to join forces with. The system however, is not one of changes en masse. Some partnerships have lasted over a number of years. A father and son team appears to last until such time as the son establishes a household of his own, but even these partnerships dissolve through mutual or individual dissatisfaction. A liking for each other, and ability to get along together were the most frequently expressed rationale for the formation, and continuance, of a trapping partnership. Ability as a trapper-hunter, and generosity were the most highly prized attributes in a partner.

The male trapping partner system receives almost unqualified support from the women.\* From their point of view it appeared that they were not unhappy about this arrangement. They were spared the hardships of winter travel and had the comforts of their homes as well as the entertainments and amenities of the settlement. Prior to the departure of the men, arrangements are made at the stores for the women to obtain groceries up to a given sum of credit, and the men when returning from their trapping camps bring with them a supply of fresh meat. The opinion of practically all the women with whom the process was discussed was that trapping was a great deal of hard work, and the way of life was decidedly uncomfortable. They stated a distinct preference for remaining in the settlement where they could work at their own leisure and in more comfort on the fur brought in. It is of interest to note here that Fort Franklin is the only settlement with a handicraft industry, and a co-operative as an outlet for these products. A large proportion of the sales made to the co-op comprise items made by women.

The absence of women in a winter camp adds considerably to the chores that a trapper has to perform, and is likely to create a situation of social isolation which he seeks to remedy by frequent trips home. The following table shows the number of individual sales of fur for the first two months of the trapping season, and gives some indication of the proportion of licence holders actually trapping and the frequency of returns to the settlement to trade fur.

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\*The two respondents who voiced a nostalgic preference for the trapping camp were two elderly women, both of whom were from other settlements where family oriented trapping patterns existed.

TABLE 17  
OCCASIONS FUR SOLD TO LOCAL TRADER\* 1966

| Settlement     | Number of<br>Individuals<br>Trading Fur | NOVEMBER |   |   |   |   | DECEMBER |    |    |    |   |   |
|----------------|---|----------|---|---|---|---|----------|----|----|----|---|---|
|                |   | 1        | 2 | 3 | 4 | 5 | 1        | 2  | 3  | 4  | 5 |   |
| Fort Franklin  | 17                                      | 11       | 4 | 2 | — | — | 49 (1)   | 14 | 17 | 10 | 4 | 4 |
| Fort Norman    | 14                                      | 14       | — | — | — | — | 33 (2)   | 23 | 6  | 3  | 1 | — |
| Fort Good Hope | 35 (4)**                                | 25       | 8 | 2 | — | — | 57 (4)   | 36 | 13 | 3  | 4 | 1 |
| Colville Lake  | 19                                      | 19       | — | — | — | — | 25 (3)   | 25 | —  | —  | — | — |

\* Taken from monthly returns of the Fur Traders Record Book

\*\*Included in the above figures are women trading fur. The number is shown in parenthesis.

TABLE 18  
RATIO OF NUMBER OF FUR SALES TO DOLLAR VALUE OF SALES FOR DECEMBER 1966\*

| Settlement     | Percentage of sales in dollar value categories |                        |                 |
|----------------|--|------------------------|-----------------|
|                | LOW<br>Under \$75                              | MIDDLE<br>\$76 - \$199 | HIGH<br>\$200 + |
| Fort Good Hope | 76 %   | 15 %                   | 9 %             |
| Fort Norman    | 73 %   | 5 %                    | 22 %            |
| Fort Franklin  | 60 %   | 14 %                   | 26 %            |

\*Source/ Fur Traders Record Book.

Table 18 indicates the percentage of sales in three dollar-value categories that might provide some indication of skills, distances travelled to higher yield areas or both. It seems improbable that even the most skilled trapper would be unlikely to take a large number of animals in an area that is intensively trapped, whereas the less skilled trapper could possibly take a larger number of animals in a well stocked area. If it is assumed that the area closest to the settlement is most intensively harvested, and that the skill and equipment of trappers are within a narrow range of comparability then this table might provide a guide to the proportion of trappers who travel farthest from the settlement.

A comparison between the Fort Franklin and Fort Norman trappers made from these two tables would suggest that there is a comparable proportion of trappers going some distance from the settlement to the high yield areas (as shown by the sales over \$200), but the larger number of individual sales for the month for the Fort Franklin trappers suggests that they are returning more often to trade fur. The male trapping partnership of the Fort Franklin trappers allows for a greater mobility. These trappers, unencumbered by their families, appear to be able to travel faster and therefore further. They appear to return to the settlement more often and consequently spend less time actively trapping.

The discrepancy between the number of licences issued and the numbers of people trading fur might to some extent be accounted for by those who are unable to trap due to being permanently employed, or too aged. But some proportion of these two groups do trap and sell fur, and the amount of trapping done by them would be influenced by the demands of the job and the physical capacity of the aged. This might suggest that the trappers in the middle and high value columns of table 18 are fairly representative of the proportion of individuals who treat trapping as a major economic activity. If the suggestion is tenable then these two columns suggest that of those who actually do trap, 24 per cent at Fort Good Hope, 27 per cent at Fort Norman, and 40 per cent at Fort Franklin harvest fur during the winter as a major source of income.

The accompanying table giving the amount of fur traded during one trapping season suggests, that in relation to the number of licences issued the amount of fur harvested is fairly small, and in relation to the proportions of dollar values of sales given in table 18 the amount of fur trapped by the largest group is even less than this average.

TABLE 19

## Fur Traded during the Trapping Season 1965-66

| Settlement     | Beaver | Fox<br>Red | Fox<br>Cross | White | Lynx | Marten | Mink | Muskrat | Otter | Squirrel | Weasel | Wolf | Wolverine |
|----------------|--------|------------|--------------|-------|------|--------|------|---------|-------|----------|--------|------|-----------|
| Norman Wells   | 26     | —          | —            | —     | —    | 5      | 5    | —       | —     | —        | —      | —    | —         |
| Fort Norman    | 334    | 3          | 2            | —     | 7    | 307    | 40   | 1540    | —     | 37       | 42     | —    | —         |
| Fort Franklin  | 270    | 6          | 4            | —     | 8    | 1091   | 92   | 275     | 27    | 39       | 132    | —    | —         |
| Fort Good Hope | 654    | 7          | 2            | 2     | 36   | 847    | 97   | 1054    | 5     | 123      | 107    | —    | —         |
| Colville Lake  | 165    | 4          | 1            | 1     | 3    | 490    | 70   | 274     | 1     | 4        | 68     | —    | —         |

Source: Game Management Record for the year July 1965 to June 1966

Fluctuations in the amount of trapping done in most of the settlements can be seen in the following tables, the decline appears to be both relative and absolute.

TABLE 20

## MAJOR SPECIES OF FINE FUR TRADED AT FORT GOOD HOPE &amp; FORT NORMAN\*

| Species   | 1961-62 | 1962-63 | 1963-64 | 1964-65 | 1965-66 |
|-----------|---------|---------|---------|---------|---------|
| Beaver    | 799     | 1,205   | 113     | 1,218   | 1,173   |
| Cross Fox | 12      | 3       | 6       | 5       | 5       |
| Red Fox   | 9       | 4       | 17      | 1       | 14      |
| White Fox | 56      | —       | 21      | 5       | 2       |
| Lynx      | 3       | 93      | 144     | 55      | 46      |
| Marten    | 4,486   | 4,783   | 4,117   | 2,725   | 1,649   |
| Mink      | 455     | 408     | 504     | 200     | 212     |
| Muskrat   | 4,416   | 7,639   | 247     | 2,823   | 2,868   |
| Otter     | 6       | 5       | 4       | 13      | 7       |
| Squirrel  | 495     | 370     | 178     | 90      | 164     |
| Weasel    | 94      | 1,151   | 279     | 213     | 217     |

TABLE 21

## GENERAL HUNTING LICENCES ISSUED AT THESE SETTLEMENTS

|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| Total Number of Licences Issued                 | 196 | 219 | 199 | 131 | 183 |
| Licences not Returned or showing a nil fur take | 20  | 26  | 26  | 31  | 46  |

\*The figures for Colville Lake and Norman Wells have been included.

Of the multiplicity of factors that could have had an influence on the changes that have occurred in the intensity of trapping, the price paid for fur has played a part. The prices of fine fur have been subject to large fluctuations and have decreased substantially over the years. The price level has been relatively low for some time now and there is little indication that it is likely to return to the level of the twenties. A list of average prices paid for fur is given in table 22.

TABLE 22. AVERAGE PRICES PAID FOR FUR IN CANADA

| Species     | 1925-26 | 1926-27 | 1927-28 | 1933-34 | 1934-35 | 1935-36 | 1949-50 | 1950-51 | 1951-52 | 1964-65 | 1965-66 |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Beaver      | 19.77   | 22.85   | 26.78   | 6.84    | 9.62    | 9.62    | 21.50   | 22.06   | 12.81   | 10.01   | 11.97   |
| Fox - Cross | 24.53   | 45.85   | 70.06   | 19.19   | 21.43   | 21.43   | 2.40    | 3.00    | 2.41    | 3.87    | 8.08    |
| — Red       | 14.05   | 20.32   | 26.90   | 7.43    | 8.31    | 8.31    | 1.75    | 2.55    | 1.64    | 3.87    | 8.08    |
| — White     | 31.15   | 43.64   | 45.16   | 17.94   | 15.31   | 15.31   | 6.50    | 11.47   | 7.79    | 9.23    | 15.55   |
| Marten      | 18.31   | 24.90   | 29.79   | 10.64   | 17.50   | 17.90   | 17.90   | 24.32   | 15.05   | 9.90    | 12.66   |
| Mink        | 12.93   | 15.33   | 16.37   | 6.27    | 12.03   | 12.03   | 24.00   | 33.92   | 25.00   | 19.14   | 18.67   |
| Muskrat     | 1.54    | 1.88    | 1.52    | .90     | 1.15    | 1.15    | 1.20    | 2.01    | 1.11    | .97     | .88     |
| Otter       | —       | —       | —       | 17.34   | 15.75   | 15.75   | 13.60   | 23.44   | 18.92   | 19.14   | 23.45   |
| Squirrel    | —       | —       | —       | —       | —       | —       | .20     | .46     | .30     | .39     | .40     |
| Weasel      | 1.48    | 1.55    | 1.35    | .42     | .77     | .77     | 1.05    | 1.58    | 1.22    | .60     | .63     |
| Lynx        | 18.38   | 31.58   | 40.52   | 13.33   | 27.34   | 27.34   | 8.50    | 9.23    | 3.75    | 11.38   | 20.78   |

Source: Dominion Bureau of Statistics

| Species                                  | 1933-34 | 1934-35 | 1935-36 | 1944-45 | 1945-46 | 1946-47 | 1963-64 | 1964-65 | 1965-66 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Beaver                                   | 11,291  | 10,504  | 13,288  | 8,426   | 12,047  | 2,633   | 10,349  | 9,656   | 9,117   |
| Weasel                                   | 5,715   | 7,367   | 4,467   | 3,526   | 11,751  | 16,709  | 8,657   | 7,691   | 6,138   |
| Fox - Cross                              | 4,875   | 3,668   | 4,074   | 2,001   | 2,967   | 2,174   | 806     | 453     | 483     |
| - Red                                    | 11,789  | 8,763   | 9,556   | 4,724   | 6,887   | 5,952   | -       | -       | -       |
| - White                                  | 52,615  | 52,467  | 25,897  | 16,765  | 20,854  | 57,750  | 29,920  | 27,041  | 10,441  |
| Lynx                                     | 5,829   | 4,395   | 4,391   | 1,774   | 1,701   | 1,065   | 2,670   | 767     | 1,378   |
| Marten                                   | 5,543   | 5,580   | 5,692   | 420     | 1       | 196     | 18,814  | 11,567  | 8,315   |
| Mink                                     | 11,134  | 16,671  | 5,466   | 4,019   | 6,348   | 4,200   | 5,839   | 4,374   | 4,453   |
| Muskrat                                  | 101,044 | 118,537 | 136,257 | 215,612 | 448,912 | 336,662 | 133,054 | 152,906 | 183,919 |
| Otter                                    | 386     | 313     | 322     | 140     | 305     | 184     | 204     | 200     | 203     |
| Squirrel                                 | -       | -       | -       | -       | 51,446  | 58,115  | 7,409   | 15,614  | 14,994  |
| Number of<br>General Hunting<br>Licences | 487     | 548     | -       | 506     | 476     | 564     | 3,621   | 3,635   | 3,756   |

Source: Dominion Bureau of Statistics  
\* Prior to 1950 General Hunting Licences had not been issued to Indians and Eskimos

Some of the other factors affecting the intensity of trapping could have resulted from fur cycles that have created a realization of the undependability of the returns from this activity, and the availability of money from other sources. The trend towards less intensive trapping by an increasing number of trappers may also be a result of the changing image of trappers and trapping on the part of a generation of young people educated in a curriculum suited to southern standards. As this education occurs at a time when they would be learning the skills required of them as hunters and trappers, the decrease in the amount of fur taken and in the intensity of trapping may, in part, be a reflection of the absence of these skills.

### EXPENDITURE – Working Capital

This would include rifles, boats, motors, fish nets etc. and should properly include dog teams.

The average prices of some representative items bought in the last year are given below:

|                 |         |                |              |
|-----------------|---------|----------------|--------------|
| Traps           |         | \$ 1.61 – .95c | each         |
| Rifle           | 22      | \$ 20 and up   | each         |
|                 | 303     | \$ 47.00       | each         |
| Ammunition      | 22      | .85c           | per box      |
|                 | 303     | \$ 6.00        | per box      |
| Nets            |         | \$ 30.00       | each         |
| Outboard motors | 10 h.p. | \$435.00       | each         |
|                 | 18 h.p. | \$545.00       | each         |
| Canoe           | 18      | \$275.00       | each         |
| Tent            |         | \$ 48.00       | each         |
| Dog food        |         | .69c           | per 5 lb bag |

Bissett has assessed, in the Lower Mackenzie Region, the average cost of the complete outfitting of a trapper at \$1732. But as most of the trappers in this study area already own some equipment it was difficult to assess their yearly expenditure on replacements within the time allotted for field work.

#### Renewal and Maintenance costs

The careless handling of equipment and the propensity to discard equipment when changing trapping areas would suggest that outlay on capital equipment constitutes a considerable expenditure over a shorter period of time than would normally be the case.

A change appears to be occurring in regard to the maintenance of dog teams. The practice has grown up among the Indians of buying packaged dog food that has to be mixed with beef fat or lard. This reduces the hazard to the dog team from loss of nets or poor catches but increases the bulk that must be transported, and raises additional problems of priorities within the limitations of space available for transporting goods and persons. It does however, constitute an avoidable expenditure if the team is not going to be used to increase the earning capacity of the owner.

#### Other Expenditures

With the increasing use of aircraft in the area the practice has developed of chartering a plane out to a trapping area. If this happens to be a high yield area and the trapper stays out for any length of time the cost of the charter might well be defrayed by the increased fur take. But if for any reason the area is vacated, much of the equipment might be discarded if the return to the settlement is by dog team, and the individual has incurred a larger than normal debt to no advantage.

## FISHING

### Domestic Fishing

No attempt has been made to estimate the extent of the domestic fishing done at the settlements as it was not possible to obtain a consensus from informants on the average number of fish taken in a net. The changing pattern in regard to the frequency with which nets are tended, and their number per household increased the difficulty of making an estimate.

At Fort Good Hope and Fort Norman there appeared to be a reliance on obtaining fish on a sharing, or purchase basis, rather than for each household to be self-sufficient in regard to fishing. At Fort Franklin, fish is bought by the co-op with the knowledge that it will be sold locally, and would suggest that the pattern here is similar to that of the other two settlements.

In 1961, Hurlbert (1962) recorded 24-32 households having set up fishing camps along the Mackenzie River for the period August 16 to September 15. During this survey, fourteen households had set up summer fishing camps for a comparable period from mid-July to mid-August. Colville Lake had one fish camp consisting of three families.

Respondents who had established fish camps stated that they intended to return to their houses in the settlements well before freeze-up. Those people who had not set up fish camps by the middle of August stated that either they would do a week's fishing late in the fall and freeze the catches, or that they would buy enough fish or dog food to last them until they had established a winter camp, and then lay up a store of fish.

Late summer and the early fall were periods during which an increasing amount of fishing was done in order to lay up as large a store of dry fish as possible, and to accumulate a supply of dog food for the winter. At Great Bear Lake, Colville and Aubrey Lake, the main species used for dog food are whitefish, herring and trout. Connies are found in large numbers during the fall in the vicinity of Fort Good Hope.

The fall fisheries for the Fort Franklin people are at the mouth of the Johnny-Ho, Whitefish and Great Bear Rivers. Those of the Fort Norman people are in the vicinity of Bracket Lake, Mohoney Lake and Kelley Lake. At Fort Good Hope the fall fisheries are along the Hare Indian River and lakes in the vicinity. Colville and Aubrey Lakes are the fall fishing grounds for the people in this area.

Weir has remarked that at Fort Norman people set up fish camps for two to four weeks from September to October". By the end of September of 1967, on the completion of field work, there had been no increase in the fishing activities at either Fort Norman or Fort Franklin. At Fort Franklin only two households were preparing to go out to set up a fish camp, and then only because they were going a considerable distance down the south shore to trap. At Fort Norman the only intensive fishing that had been done, had occurred through the aegis of the area administrator, who had persuaded and provisioned three families to go out and lay up a store of fish for themselves, and a reserve supply for the community.

### Sport Fishing

Two lodges are in the process of completion at Colville Lake, and since 1961 three sport fishing lodges have been established on the western shore of Great Bear Lake. Another is in the process of construction on the south shore of Smith Arms, and the co-operative at Fort Franklin has built two plywood-and-frame cabins for the use of tourists.

Statistics are unavailable for the amount of fishing done by the tourist population, and estimations of this would likely be inaccurate due to the growth and expansion of the lodges. But with the legal limitations as to the numbers allowed for various species, the harvest would be negligible in terms of the fish population of the lake.

### TOURISM

Tourism in the area has gradually developed since the opening of the first fishing lodge on Great Bear Lake in 1961. At present there are three lodges on the western shore of Smith Arm. During this period three big-game hunting camps have been opened in the Mackenzie Mountains. These tourist facilities have provided wage employment for an increasing number of the Indians and Metis, and employment figures are given with the discussion of the economies of each settlement.

At Colville Lake and Fort Franklin, there is an increasing effort on the part of the local entrepreneurs to provide tourist facilities. The Roman Catholic Missionary and the free trader at Colville Lake have constructed a lodge with log cabin accommodation for fishing enthusiasts, and at Fort Franklin the co-operative has invested in two frame-and-plywood cabins.

All three of these enterprises are faced with the high costs of operation, advertising and accessibility. At these latitudes the season is even shorter for this type of venture which means that the lodge has to operate at maximum capacity during this period, and that the high costs of operation can be absorbed only by this limited population.

Tourist facilities at Norman Wells are limited to a lodge complex made up of two converted house trailers. These can accommodate 20 persons by sleeping 4 to a room in double bunks. Meals can be obtained at additional cost.

### HANDICRAFTS

Another source of income for the Indian and Metis is through the sale of handicrafts, but apart from the sales made to the co-op at Fort Franklin it was difficult to assess the earnings from this source.

At Fort Franklin, wood, bone, antler and hide are used in the production of a wide range of handicrafts. The Great Bear Co-operative is the principal purchaser in the community. Handicrafts from this settlement are sold in the Craft Center in Inuvik, and through a number of retail outlets in southern Canada.

At Fort Norman and Fort Good Hope, handicraft production is centered around the making of native leather goods. As there is no organized marketing system for these items production is on a small scale for local sale, and is usually custom made for orders received. At Colville Lake no handicrafts are produced for sale.

Most of the moose hide used in the making of leather goods is purchased from the store. In the practice of selling green hides to the store and purchasing a tanned one with which to produce leather goods, some loss of revenue is sustained by the handicraft producer. In these settlements it appeared that there were very few women either competent enough or willing to undertake the tanning of a hide.

### LUMBER

At present there is no lumbering or sawmill operation in the Central Mackenzie. The economic viability, or need for such an enterprise becomes questionable in the light of the stands of timber available, and the low demands for lumber in the settlements. With sawmill operations to the north at Arctic Red River, and to the south at Fort Simpson, the lumber requirements of the settlements can be met more cheaply by purchase from either of these outlets.

## AGRICULTURE & GARDENING

Poor drainage, poor aeration, low temperatures, and acidity of the soils are interdependent factors that restrict bacterial action and consequently the production of available nitrogen and phosphorous from decaying organic matter. In the Central Mackenzie, the finding of sites where a concentration of these elements would be minimal, and within easy reach of a settlement might pose something of a problem. The resultant relative infertility of soil due to being deficient in phosphorous and nitrogen, would require the extensive use of commercial fertilizer which would add to the costs of an agriculture project.

At experimental stations situated at Fort Vermilion, Fort Simpson, Mile 1019 in the Yukon, and at Fairbanks in Alaska, it has been found that annual differences in precipitation, temperature and other climatic factors have influence large variations in crop yield at each site.

Nowosad and Leahy have stated that agricultural development can proceed only if 1) the climate is sufficiently moderate to allow 60 frost-free days per season; 2) the mean July temperature is over 50°F.; 3) good soil is available; 4) there is a demand for certain agricultural products, and 5) the costs of production are not excessive.

With the combination of climatic factors, the accessibility of suitable sites, the demands of local markets, and the economics of farming in comparison to other areas, the development of agriculture in this area does not at present appear to be a practical proposition.

Small scale vegetable gardening has been undertaken by the Mission at Fort Good Hope for a number of years. The produce grown has been of a limited variety, and yearly yields have fluctuated with the use of commercial fertilizer, periods of low precipitation, and the late or early occurrence of killing frosts.

Experimental research is required in the Central Mackenzie similar to that being carried out in Inuvik into the possibility of developing a market gardening industry through the use of plastic crop shelters, or greenhouses.

## SUMMARY

Climate and geography have had a considerable influence in determining the resources available in the area, and the type of primary industry that is likely to develop.

Non-renewable resource utilization has been limited to some extent by the difficulty and expense of access to the region. This should increase with the development of a cheaper year-round transportation system and market demands for the products.

Sport fishing and big game hunting have been recent economic developments based on the utilization of renewable resources, and have provided another source of income for the Indians and Metis. The short ice-free season in the lakes and rivers limits the period of sport fishing to approximately six weeks.

Traditionally, hunting and trapping have provided the most extensive utilization of the fauna, but the unavailability of statistics for the hunting lodges makes it difficult to estimate the extent of the big game hunting, and the relationship, if any, to the amount of hunting done by the Indians and Metis. It does appear, however, that apart from the government sponsored hunts, the amount of hunting done by the latter is quite small.

There appears to be a general trend towards less intensive trapping at all the settlements. Some of the factors affecting this may have been the low prices paid for fur in recent years, the availability of money from other sources, and a decrease in skills or inclination of the younger, less traditionally minded people.

## Chapter 4

### THE SETTLEMENTS

#### Introduction

During the re-organization of the Hudson's Bay Company, after their amalgamation with the Northwest Company in 1821, several trading posts were closed or moved to seemingly more economic locations. Fort Good Hope and Fort Norman were two posts that were relocated at their present sites in 1886 and 1851. It was not until 1950 that a permanent post was re-established at Fort Franklin.

During the period of missionary activity in the late nineteenth century, missions were built at Fort Norman and Fort Good Hope. The permanent mission at Fort Franklin was not established until 1958, and this was done by Father Brown O.M.I., who has only recently opened a mission at Colville Lake. Fort Norman is the only settlement in this area to have had both Catholic and Anglican Missions. The latter was closed in 1944 and has not been reopened since.

Since the discovery of oil in 1916, Norman Wells has been developed by Imperial Oil Limited for the purpose of utilizing the oil resources, and today is the best laid out and serviced community in the area.

#### GOVERNMENT RESPONSIBILITIES

The increasing interest and involvement by the Federal Government in the development of the Northwest Territories has led to the government assuming the responsibility for developing these small northern communities, and providing services and utilities. This has led to an influx of Euro-Canadians to fill these posts, and the communities have gradually taken on more urban characteristics.

The first police detachment in the area was established at Fort Norman in 1916, and was followed 8 years later by another at Fort Good Hope. To date, these are the only two settlements with an R.C.M.P. detachment.

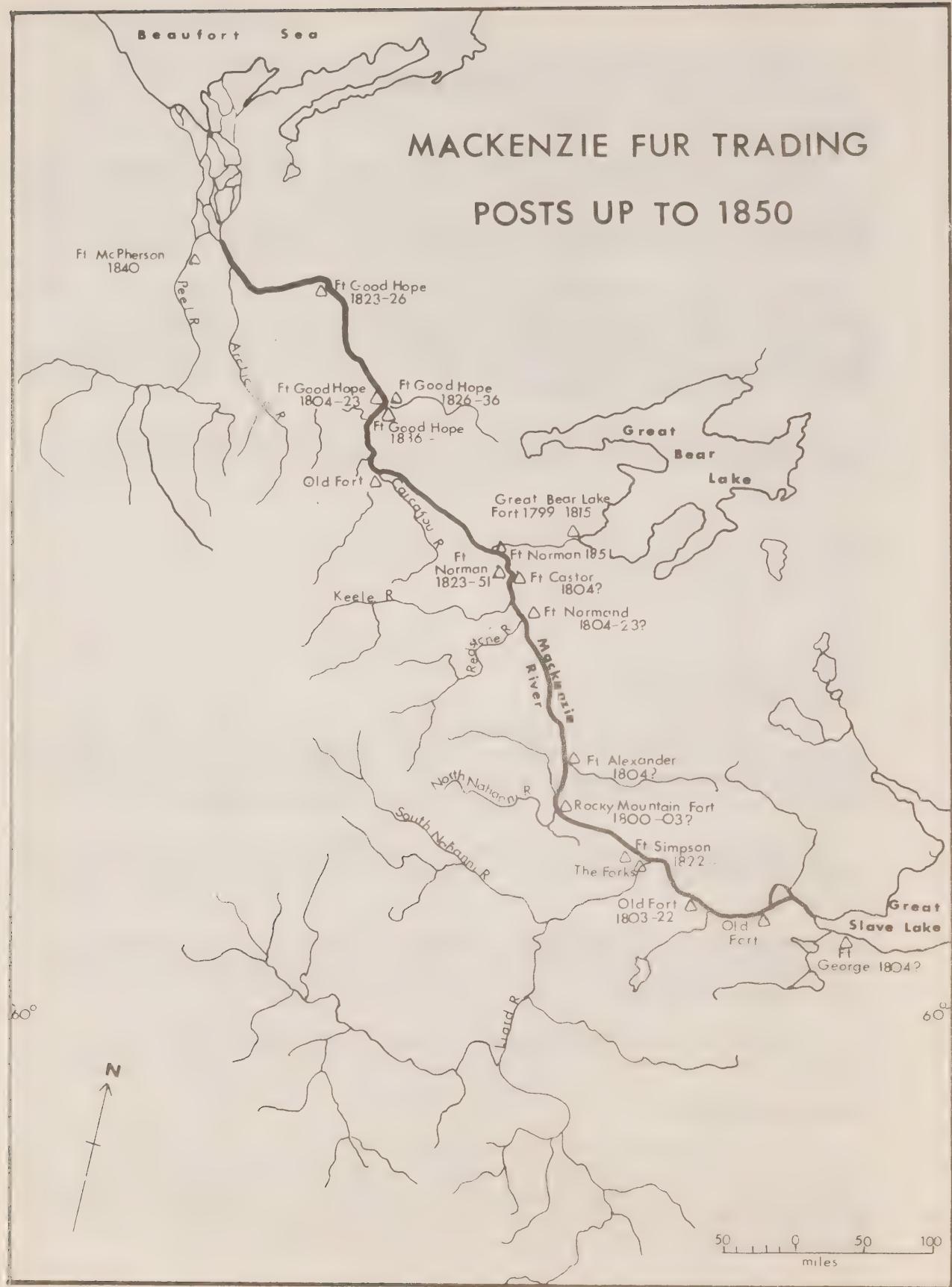
Since the 1920's Fort Norman and Fort Good Hope have had a cluster of Euro-Canadian residences and a gradually increasing number of Indians cabins. A settlement type of living has been later in developing at Fort Franklin and Colville Lake.

To day there are schools, medical facilities, and administrative personnel at all the settlements except Colville Lake.

#### LANDS AND MINERALS

At the time this survey was done these were both still vested in the Crown, and question of Indian title was still in the process of negotiation. Crown land may be purchased, or leased for a period of 20-30 years, if the property has been legally surveyed. With the exception of Colville Lake all the settlements have been surveyed, and land has been purchased by the Roman Catholic missions and the H.B.C. At Norman Wells and Fort Franklin land is on lease to I.O.L., and the Northern Evangelical Mission.

Figure 6



## Part I

### GENERAL CHARACTERISTICS OF THE SETTLEMENTS

#### SOCIAL ORGANIZATION

Cohen (1962) has stated that the major social distinctions in the regions are:

"those between Whites on the one hand, and Metis and Indians on the other.....Metis and Indians live somewhat similar lives and may be more or less separated from one another as groups. Metis generally know the native vernacular and Whites do not. Metis/Indian inter-marriage is not uncommon, while White/ non-white inter-marriage is much less frequent. Finally and most importantly, White/non-White social distinctions are closely correlated with occupation."

Due to the transient nature of the majority of white residents in these communities, for the present purposes\* only the Indian and Metis will be considered as permanent residents. The community organization of the white residents of these northern settlements has been dealt with by Cohen and their individual roles will be briefly summarized. The range of official duties and responsibilities is defined by the position filled by the incumbent and the range of variation within these limits is determined by the personality characters of the individuals concerned. Limitations on possible role behaviour variations are exerted also by the incumbents of other positions.

#### The Missionary

The prescribed duties of the missionary are those concerned with the performance of religious rituals, proselitising, and the maintenance of mission buildings and equipment. The older missions are less interested in making converts than in servicing those who are members of their faith. The more recently established missions are more active in proselitising and hence appear to sustain a higher degree of interaction with the natives.

As with the other white residents of these communities, the range of activity open to the missionary can vary within given limits. The priest at Fort Franklin has been a moving force behind the organization and the establishment of the native co-operative. The priest at Fort Norman takes an active interest in developing local handicrafts, but feels that a venture into establishing a co-operative is beyond his duties or interests. Missionaries of the other two settlements place the emphasis on developing skills of the Indians as trappers and hunters. At Colville Lake the missionary also takes an active interest in developing the tourist potential of the area.

#### The Trader

In the settlements (other than Norman Wells) the relationship between trader and the customer is an important factor in the purchasing power of the latter. A large proportion of the trade is done by accounting rather than by cash sales, as the trader has to extend credit for the purchase of equipment and supplies to enable the trapper to trap. Credit can, therefore, be obtained on the basis of past trapping records or as a result of earnings from wage labour. Credit is often extended to the non-Indian population for purchase of such items as ski-doos and snow-cruisers and also for day-to-day requirements, with the customer paying by cheque at given intervals.

At Norman Wells there is no local trader, as I.O.L. and D.O.T. both have arrangements for supplying their employees with groceries. There is a small retail outlet run by the former at which a very limited range of merchandise can be obtained by company employees.

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\*There are instances where the occasional Euro-Canadian has settled permanently in a community and for the present purposes they have been excluded from the category of permanent residents unless they have established a menage that constitutes a household group.

### **Game Management Officer**

The duties of this Officer include supervision of the utilization of the wild life resources of the area. He is responsible also for making field surveys, keeping a record of all game taken and renewing local hunting licenses. He provides assistance to the Indians in the form of advice regarding hunting and trapping areas, improved techniques in trapping, and preparation and care of skins. He is also responsible for fire-fighting and forest fire prevention. Essentially his role is one of conservation and guidance. In the last two years the selection of candidates to go on guide training courses has been added to his duties.

### **The Royal Canadian Mounted Police Constable**

The role of the resident police officer has gradually changed with the influx of other Government functionaries and is now limited to enforcement and maintenance of law and order. Through discussion and counselling these officers also provide a crime prevention service to the community.

### **The Government Administrator**

Administration and community development are the fundamentals of the role of the area administrator.

His main responsibility is the day-to-day administration of the community, the implementation and operation of Government policy and projects and the performance of duties set up under the Indian Act and Treaty No. 11. Another of his responsibilities is to assist the Indians to assume a greater role in the direction and management of their affairs through meetings with the band council and other communities advisory groups, where the latter exist. In some communities his duties may include the supervision of, or provision of whatever community utility services that exist. In those settlements where there is no police constable, the acting area administrator usually acts ex-officio as an agent for maintaining harmonious, law-abiding relationships within the community. His jurisdiction in this respect is limited and the police are summoned to deal with infractions of the law.

### **The Teacher**

The role of the teacher in addition to teaching is primarily to select students from the local community to go out to study in residential schools in the larger centres.

The extra-curricular range of teacher inter-action in the community is not necessarily confined to the above but is more a function of their interests and talents. Probably because teachers are not regarded in such stereotype fashion as are other whites, they can, and do, act as catalysts for a variety of community activities.

### **The Nurse**

Broadly, the official responsibilities of the nurse cover the physical and mental health of the residents of their communities. The nurse runs the local dispensary – treatment centre and is also responsible for improving local standards and customs of hygiene. Preventive medicine, treatment, medical referrals and follow-ups, pre-natal classes and vaccination programs are some of the major issues they are expected to deal with.

Even though the role of the nurse is perceived quite stereotypically by the local people, the range of community activities in which her advice and assistance are sought is again determined by the personalities of the individuals filling these posts.

## COMMUNITY SERVICES

Norman Wells and Colville Lake are almost entirely excluded from the following discussion of the services and utilities found in the settlements, as Federal Government involvement in the provision of these has been minimal at Norman Wells. The settlement at Colville Lake is such a recently established community that insufficient time has elapsed to determine its viability.

At Norman Wells the utilities are provided and maintained by Imperial Oil Ltd. In addition to these, the company operates a small hospital and fire fighting service; it supplies recreational facilities, and provides a building to be used as a church by all denominations.

The two airline companies have offices at Norman Wells, and I.O.L. maintains a small private retail store for the use of their employees only. There is no retail store in this settlement open to other residents. The only Territorial liquor store in the area is situated at Norman Wells. This settlement is also a stopping point on the main northern air route, so the communication systems are different from those of the other settlements.

The Federal Government has built a two classroom primary school, and has developed and maintains the all weather airport.

At Colville Lake the only white residents are the Roman Catholic Missionary and the trader. Community services are minimal, and there are no utilities provided on a community-wide basis.

### Schools

In the Northwest Territories the provision, maintenance and staffing of schools fall under the jurisdiction of the Federal Government. Residential schools that are high schools or a combination of all grades have been built at various centers. Wherever possible children attend primary schools in their communities and go on to residential schools to complete their secondary education.

All the communities, with the exception of Colville Lake have Federal Day Schools, and at Fort Franklin there is a recently constructed four-bedroom hostel. The largest number of school age children from Colville Lake go out to residential schools. The remaining few go to school in Fort Good Hope where they are boarded by relatives.

### Medical Services

These services are provided by the Department of National Health and Welfare, either through the provision of medical staff and treatment facilities, or through the use of existing local services.

There is a modern, well-equipped, four-bed nursing station run by two nurses at both Fort Franklin and Fort Good Hope. The nursing station at Fort Norman is an older building but is equipped to provide the same in-patient and treatment facilities as the others, and is staffed by one resident nurse. The nursing services at Colville Lake are provided by the nurses at Fort Good Hope who make every effort to visit the settlement regularly once a month. At Norman Wells there is a company-owned, ten bed, well equipped hospital, with a resident doctor and part-time nurse. Patients requiring emergency treatment, or medical attention in excess of what a nurse feels capable of providing are usually transferred to the hospital at Inuvik.

### Religious Institutions

Fort Franklin, Fort Good Hope and Fort Norman all have both Roman Catholic and Pentecostal missions. Since the closure of the Anglican mission in 1944 the small church at Ft. Norman has been boarded up and remains unused.

## Law Enforcement

In the Northwest Territories this service is provided by the Royal Canadian Mounted Police. There are two police detachments in this area.

The detachment at Fort Norman is staffed by two R.C.M.P. officers who also provide the regulatory services for Norman Wells and Fort Franklin. Colville Lake is served by the officer and special constable stationed at Fort Good Hope.

## Forestry and Game Management Service

There are two resident wildlife officers in this area. Fort Franklin, Fort Norman and Norman Wells are under the jurisdiction of the officer stationed at Norman Wells. The officer based at Fort Good Hope is also responsible for the territory covered by the Colville Lake group.

## Utilities

In the absence of local agencies capable of providing these services at the settlement level, the Federal Government assumed the responsibility to do so. Wherever possible these services have been contracted out to local entrepreneurs.

### Electricity and Heating

Indian and Metis houses are, with few exceptions, heated by wood burning stoves or kitchen ranges, and light is usually provided by coleman lamps. The availability of a plentiful supply of wood and the high cost of oil militate against the use of oil furnaces by the Indians and Metis. Nor can most of them afford to have their houses wired for electricity, or purchase this at the rate of 12c per kw.

The houses of most of the white population have electricity installed and are usually centrally heated by oil furnaces.

The D.O.T. supplies the electricity at Fort Good Hope and I.A. & N.D. provide it at Fort Norman and Fort Franklin. In all three settlements the demands for electricity are in excess of the capacities of the generators, and larger machines are being installed. The capacity of the generators has also been a factor limiting the extent to which electricity has been available for distribution.

### Garbage and Sewage Disposal

In the absence of a sewage disposal system, government buildings are equipped with septic tanks that have to be emptied periodically. Other buildings have outdoor privies, and used water is dumped on the ground near the house. Garbage collection services exist in all the settlements except Colville Lake.

### Water

A water delivery service is provided by the local contractor at Fort Norman and Fort Good Hope. In Both cases the water source is the Mackenzie River. As the water is not boiled prior to consumption it constitutes a health hazard during the periods of break-up and freeze-up, when it must be obtained from the river in close proximity to the settlement.

At both settlements three one-thousand gallon water tanks are situated at various locations in the village. During the summer these are maintained by the department for the use of the Indians and Metis. At Fort Franklin and Colville Lake water is drawn from the lake.

With the exception of Colville Lake, at all the settlements, there is a bi-weekly water delivery to government houses. At these times water can be purchased by other members of the community for 2c a gallon.

## HOUSING

The various departments of the Federal Government provide accommodation for their employees. The type of accommodation provided varies according to the period at which the buildings were constructed. Living accommodation also differs in regard to location. Some units are an extension of the place of work, as with the nursing stations and some of the schools. In other instances residences and offices are some distance apart.

In the main, the houses of the government employees are frame type dwellings. The more recently built houses are bungalow style. All government housing is equipped with water storage tanks, indoor plumbing, central heating and electricity.

Other white residents provide their own accommodation, these vary according to the interests and financial status of the individuals concerned. In the case of the missionaries, buildings are either of logs or are frame-type dwellings, and in most cases are of a higher standard than the Indian and Metis houses.

The largest number of Indian and Metis houses are of log construction chinked with moss. A few, built more recently, are frame structures. Most of the houses have two or more rooms on the ground floor with a loft above that is used as a storage space or an additional sleeping area. The interiors of the houses either show log surfaces or have been lined with plywood or sheets of heavy brown paper or a miscellany of other materials.

A number of houses have small log or frame sheds built near by which are used for the storage of equipment.

## COMMUNITY CLUBS AND RECREATIONAL ORGANIZATIONS

Recreation activities at all settlements with the exception of Colville Lake are maintained by a recreational club or a community club. The number of community recreational activities, women's institutes and service organizations in a settlement vary. They are dependent on the enthusiasm and interests of the whites in these communities who are, as a rule, the organizers and most active members of these organizations.

Fort Norman, Fort Good Hope and Norman Wells have community halls where movies are shown and dances and bingo games are held. At Fort Franklin the community club has only recently been completed replacing the school as accommodation for these activities. The recreation hall at Norman Wells is equipped with more elaborate facilities and there are a greater number of recreational activities provided than at any of the other settlements. Colville Lake has no community hall; an abandoned cabin is used for movie showing during the summer and the mission hall during colder months.

A woman's auxiliary has had varying degrees of success at Fort Norman, Fort Franklin and Fort Good Hope where they have been set up to encourage women to join together in activities of common interest. One hidden advantage of this organization is that it provides an opportunity for members to become familiar with processes of committee procedure and the operations of a formal organization. The social activities appear to be enjoyed much more than are the committee procedures and it seemed that members would prefer to treat meeting as a social event.

All settlements except Norman Wells and Colville Lake have a Band Council and a Trappers Council. The former organization is concerned with community development affairs of the settlement and the latter with making recommendations concerning guiding and trapping. These cover such items as recommendations for fishing and hunting limits, beaver quotas, and discussions on trapping practices, care and preparation of raw fur. Fur prices, employment conditions and wages paid to guides are also subjects for discussion at the Trapper's Council meetings. The Trapper's Council forms a focus of group identification

and the meetings are well attended. As Weir remarks: "perhaps one of the most important aspects of these organizations is simply that it is a formal organization to which most Indians belong"

Fort Norman, Fort Good Hope and Norman Wells have a Community Advisory Council composed of Indians and non-Indians. The purpose of this body is to discuss existing conditions and formulate suggestions for submission to I.A. & N.D. in regard to community development projects.

### POPULATION CHARACTERISTICS

Before considering the population characteristics of any of the settlements it is necessary to point out that since all populations under consideration are small, statistical analyses are probably of limited value and, for this reason, none had been attempted. Certain general characteristics are nonetheless distinguishable.

One of the characteristics of these populations is the existence of four groups in all the communities except Colville Lake and Fort Franklin. These are Indians,\* Metis, enfranchised Indians and whites. All, except the latter have been born in the area or have lived there for long periods of time and will probably continue to do so. For discussion purposes Metis and enfranchised Indians have been grouped together under one heading.\*\*

Another factor affecting population characteristics of these communities is the existence of individuals of over school leaving age who are in fact still going to residential school in the large centers.

The smallness of the numbers of the various categories in the population structure is affected to a significant degree by slight changes in their actual composition. This is particularly noticeable in the summer when school children return home and assume their position in the labour force and compete for whatever employment is available.

A third factor is the cyclical variation of activities that would alter the number of persons resident in the community and the age sex ratios. This occurs during the trapping season and on the return of school children.

Another feature of these populations is that they have been characterised by a high degree of geographical mobility that has been required by a hunting trapping economy. Changes that have occurred in economic activities have been one set of factors that have influenced the development of more sedentary patterns of living. The building of schools and houses for the Indians has been another, and at present there is a considerable difference in the amount of geographical mobility that occurs in the settlements.

Colville Lake is characterised by having the least amount of wage labour community services and a high degree of seasonal geographical movement of groups. Norman Wells is the reverse of this. The other three settlements appear to fall on a continuum between the two.

Discussions of population characteristics are given with each settlement, but these have had to be limited due to changes that have occurred by the Fort Good Hope group subdividing, and by the recording procedures initiated in 1951 which differentiated the Bear Lake Indians from those at Fort Norman.

### Part II

#### COLVILLE LAKE AND FORT GOOD HOPE – General Remarks

The Indians of the Colville Lake and Fort Good Hope area are members of the Hare Tribe. Within this linguistic group there are two mutually intelligible dialects. One is spoken by the Colville Lake people and the other by the Fort Good Hope Group.\*\*\*

\*Registered Indians are individuals whose names are included on an official Indian Register. Registered Indian is the legal definition used by the Indian Affairs Branch for people who come under jurisdiction of the Indian Act

\*\*The whites are being termed temporary residents of the settlements as most of them except the contractors at Forts Norman and Good Hope and the trader at Colville Lake, are representatives of outside agencies and as such are subject to transfer in and transfer out of the community. The other three groups constitute the core of the settlement and have been considered as permanent residents.

\*\*\*See Brown (1965) Hurlbert (1962) and Osgood (1932)

Osgood has shown that there were five bands of Hare Indians inhabiting the area around Fort Good Hope. It now appears that after a transition period of mobility between Colville Lake and Fort Good Hope, one group has settled on the southern shore of the lake with an increasing degree of permanency and separateness from the people at Ford Good Hope.

As a residential unit the Colville Lake group has become more consolidated with the establishment of a Roman Catholic Mission in 1962 and the establishment of a white trader in 1964. Prior to this, the Indians had either to use a small outpost maintained there by the free trader from Fort Good Hope or go to Fort Good Hope to trade and for religious purposes.

There is still a considerable amount of movement back and forth of relatives between the two settlements, but this is more in the nature of visiting than transference of residents. Two cabins are maintained at Fort Good Hope by Colville Lake people and two families have abandoned their cabins and moved out of Colville Lake to settle in Fort Good Hope. Two elderly women with married offspring in both settlements spend long periods of the year living with their children in one or the other of the settlements.

### POPULATION OF FORT GOOD HOPE AND COLVILLE LAKE

As recently as 1961 both Cohen (1962) and Hurlbert (1962) have remarked on the transient nature of the Colville Lake group. Hurlbert appears to have included these people in the statistics of Fort Good Hope. She has stated that there were 71 native households in Fort Good Hope and vicinity and shows 16 households for Colville and 55 for others in September of 1961. Our census for 1966 shows a total of 53 households for Fort Good Hope and 17 for Colville Lake with one family having moved to Norman Wells.

The population of the Fort Good Hope – Colville Lake area has shown a consistent increase since 1957. This appears to be a result of a lowering of the death rate while a relatively high birth rate has been maintained. The high birth rate has offset whatever emigrations have occurred over the past ten years and if sustained at the present level should very rapidly create problems in regard to the critical density that the subsistence economy of the area will support.

Hurlbert (1962) has estimated this figure at 350 and Cohen (1962) at 300. With the development of another settlement at Colville Lake it is questionable whether these figures will hold good for each community separately, as through the recognition of group territoriality, the people who have settled at Colville Lake, have in fact, reduced the trapping-hunting area available previously to the whole group.

### TRAPPING AREAS OVERLAP – Fort Good Hope and Colville Lake

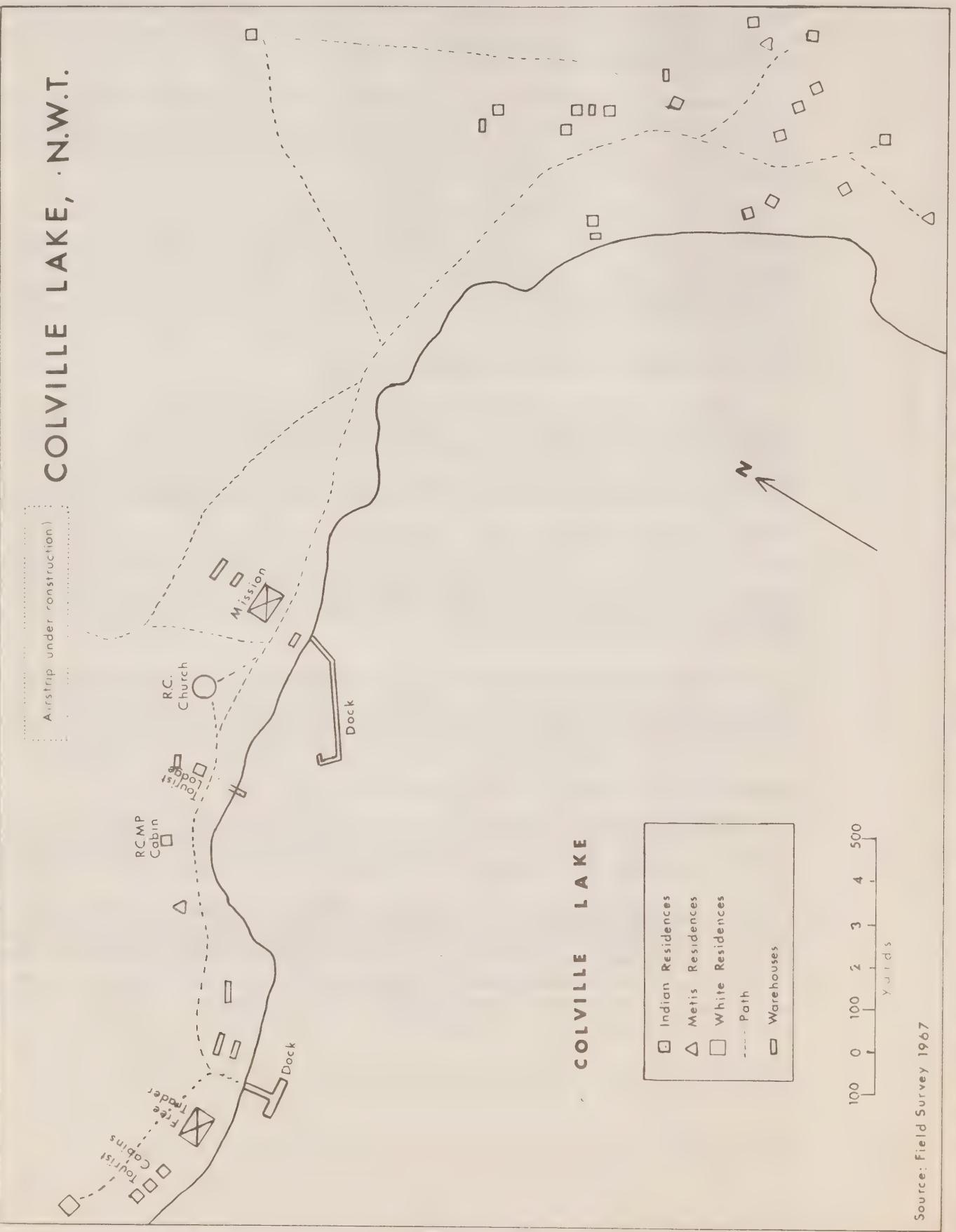
Considerable overlap occurs between the trapping areas of both the Fort Good Hope and Colville Lake groups. While there appears to be no recognized claims to individual territorial rights in regard to trapping or hunting areas, there does appear to be a recognition of group territorial rights in these regards.

The Colville Lake people feel free to range as far north and west as they can until they meet the Inuvik and Coppermine trappers, or as far south and east until they meet the Fort Franklin and Fort Good Hope people. The greatest overlap of trapping areas occurs to the west south-west. This region is reputed to be a highly productive fur bearing area and is accessible to the Fort Good Hope families who have made their base camps at Yeltea, Manuel and Rorey Lakes, and to those from Colville Lake who have set up their camps at Aubry and Belot Lakes.

Figure 7

# COLVILLE LAKE, N.W.T.

## Airstrip under construction



Source: Field Survey 1967

## COLVILLE LAKE

### LOCATION & SITE

The settlement at Colville Lake is situated on a bay on the south shore of the lake approximately 88 air miles from Fort Good Hope. The settlement is still within the boreal forest but is only about 50 miles from the nearest point of termination of the tree line.

The settlement site stretches along the shoreline for approximately half a mile and varies in width from 25 to 200 yards. Buildings are situated from about 10 to 30 feet above the level of the lake. The site is located on a poorly drained, relatively flat low-lying area. A deep layer of vegetation and organic material on the surface provides insulation for the underlying permafrost, and as a result drainage is impeded. The result is that there is perpetually wet ground throughout the settlement.

### TRANSPORTATION

The community is not serviced by any scheduled air service, nor by any system of barge or overland system of transportation. A winter road was cut to the settlement from Fort Good Hope in the winter of 1966. Access is still mainly by charter aircraft from Yellowknife, Inuvik or Norman Wells. Some movement between Colville Lake and Fort Good Hope occurs during the winter by means of dog teams and this distance has been, until recently, travelled on foot during the summer.

### COMMUNICATIONS

The communication system in this settlement is rudimentary. One radio-telephone link with the outside is maintained through the daily mission radio circuit. Telegrams and messages of various sorts have to be passed through this radio circuit for retransmission to other centres.

Mail reaches the settlement by aircraft from Fort Good Hope, or by dog team when anybody is returning to or visiting the settlement.

### SERVICES, AND UTILITIES

Service facilities in the settlement are non-existent. There are no water delivery, electricity, or garbage disposal facilities. Ice or water is obtained from the lake and dumped on the ground after use. Almost all Indians have outside toilets and the surrounding area of scrub bushes appears to serve as a garbage disposal area. Dogs are tied and staked out in the bushes near to the lake in close proximity to the houses. To the uninitiated this can present difficulties in getting around the community.

### ADMINISTRATION & HEALTH SERVICES

The R.C.M.P. Officer, Area Administrator and a nurse from Fort Good Hope attempt to visit the settlement at regular monthly intervals. Of the three, the nurse is probably the most regular visitor. The facilities of the mission are made available to her and all medical personnel for the examination and treatment of patients and for living accommodations if required.

### SCHOOLS

There is no school in this settlement. The six children of school age either have to go out to school at Inuvik or are boarded with relatives and friends at Fort Good Hope. Parents appear to be satisfied with these arrangements and realize that having a school locally might create problems in regard to their trapping activities.

## ROADS AND DOCKS

No roads have as yet been constructed in this community and footpaths develop according to usage.

There are two docks in the settlement; one belonging to, and opposite, the Roman Catholic Mission House and the other, constructed by a free trader, is located at the western tip of the settlement opposite the store.

## HOUSING

The main part of this settlement was built prior to the arrival of the missionary. The log church of Our Lady of the Snows, along with the mission house, warehouse and tourist lodge was built on a slight rise of what was then the western tip of the settlement. With the arrival of the free trader more log buildings were constructed along the shoreline some 200 yards west of the mission. In the area between the two, the trader's son has built himself a log cabin and the R.C.M.P. have erected a small plywood over-night cabin that is used also by the Area Administrator from Fort Good Hope.

In the settlement the only two residences of any size have been log dwellings constructed on a gravel pad base. With the exception of two plywood houses constructed by I.A. & N.D., Indian houses are also constructed of logs and chinked with moss. Heating is by means of wood-burning stoves and lighting is provided by gas lamps.

## COMMUNITY CLUBS, RECREATIONAL FACILITIES

These aspects of the communities have already been dealt with. Recreational facilities are limited to the showing of movies by the missionary, and there are no community organizations other than a band council.

## POPULATION

Of the 17 households at Colville Lake in 1966, two were Metis and one an enfranchised Indian family. The white trader and his family and the missionary made up two groups not included in the total. The total population of the settlement, excluding whites, was 75 persons. a population pyramid is given in Figure 7.

In the age group 16-65 years there is a surplus of males. The largest proportion of these fall between the ages of 16-20 and 31-35. This is suggestive of either an immigration of males and a number of bachelors sharing households, or a number of family groups of bachelor sons living with aged parents. The latter is in fact the case. There are eight bachelors and two spinsters in the 16-35 year group and seven out of seventeen households are composed of more than two adults.

The population pyramid also shows that unlike the other settlements, the population of Colville Lake is not characterized by a large proportion of children. There are 18 children representing 25 per cent of the population in the 0-15 age group, while 66 per cent of the population falls between the ages of 16-65.

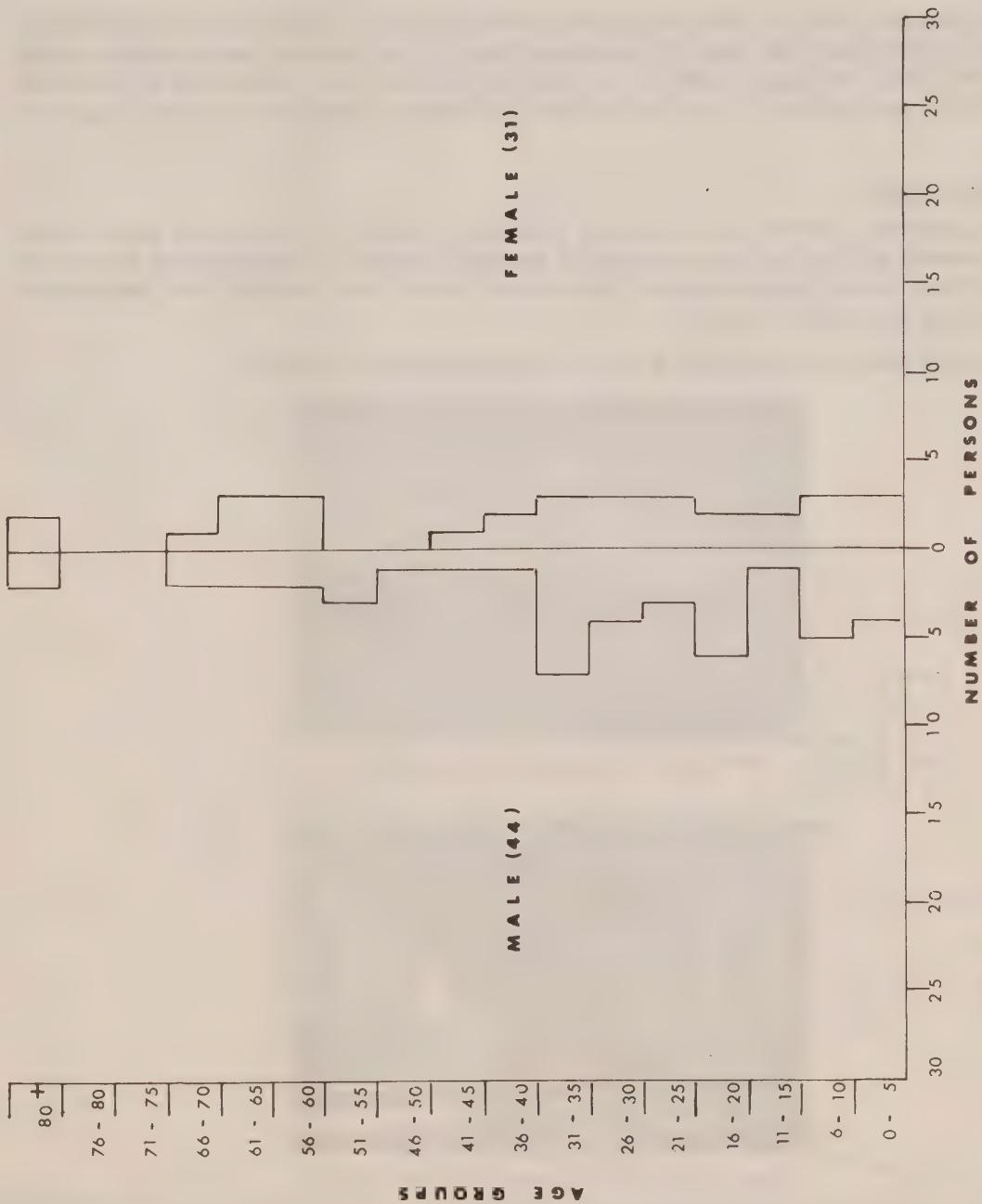
Of the fifteen married couples in the community, six couples were over the age of fifty and four couples below this age group were childless. There is one widow with a child and one unwed mother. This leaves sixteen children between five families or 3.2 children per family. Of these, two children in one family are from a previous marriage and two are adopted from Fort Good Hope.

The small number of persons in the 36-50 age group appears to be similar to that of the equivalent category in the Fort Good Hope people and both these groups might have been affected by the epidemics during the first two decades of this century.

As this group constitutes a very newly settled community, comparison between it and the other settlements is not possible except to note the smallness of the number of children and the predominance of males in the 0-10 age group.

AGE - SEX STRUCTURE - COLVILLE LAKE, 1966\*

Figure 8



\* Excluding whites

## FORT GOOD HOPE

### LOCATION & SITE

The settlement of Fort Good Hope is situated on the east bank of the Mackenzie River where a small stream, Jack Fish Creek, enters from the north-east. Four miles north of Fort Good Hope the Hare Indian River enters the Mackenzie. Two miles to the south-west of the settlement is the northern end of The Ramparts. These are vertical cliffs of limestone 7 miles long, rising 100 to 200 feet above the Mackenzie and constricting the river to a width of a quarter of a mile.

Fort Good Hope is approximately 17 miles south of the Arctic Circle. The nearest settlement of any importance is Norman Wells some 90 miles to the south-east.

The settlement is built on several terraces of the Mackenzie River, which increase in height from the mouth of Jack Fish Creek to the north. The terraces are broken by two abandoned east-west tending valleys of Jack Fish Creek. The banks of both the river and the creek rise 40 to 60 feet above the water, and consequently when approached by water the buildings of the settlement appear to be set on the edge of the cliff.

### TRANSPORTATION

The settlement is serviced once a week by Northward Aviation Ltd., flying out of Norman Wells. During freeze-up and break-up the community is completely isolated. An emergency air strip on the settlement bench is near completion and is usable although landing is still hazardous after heavy summer rain and during the spring run-off period.

The settlement is also serviced by the N.T.C.L. barge system during the summer.

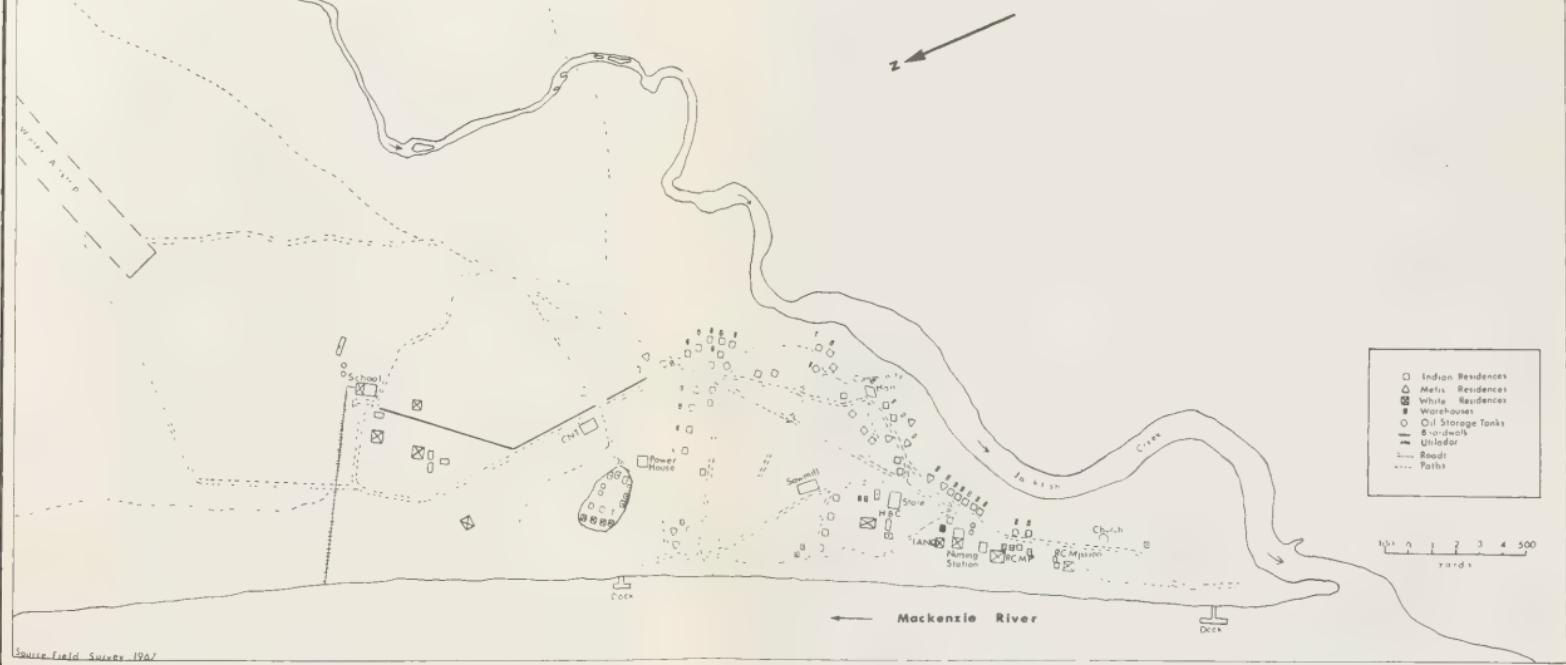


Plate 1. D.O.T. complex in the background.



Plate 2. Interior of the Roman Catholic Church.

## FORT GOOD HOPE, N.W.T.





## COMMUNICATIONS

Apart from the weekly mail service, C.N. maintain the landline telephone service to all external points. There is also a local telephone system connecting the non-Indian residences.

Radio communication has already been discussed, and five radio-telephone sets are maintained in the community.

## SERVICES AND UTILITIES

These have already been mentioned and Fort Good Hope differs little from the general description.

Water from the settlement is drawn from the Mackenzie River during the winter and from a dammed-up creek during the summer. At the periods of break-up and freeze-up it must be obtained from the river in close proximity to the settlement, and constitutes something of a health hazard as water is not boiled before consumption.

Three one-thousand gallon water tanks are situated at various locations throughout the village for use of the Indians and Metis during the summer. The local contractor delivers water to these and to the white residences once a week or more as necessary. Water can be bought by the Indians and Metis at 2c per gallon.

There is a regular weekly garbage collection service by the contractor which is dumped some distance from the village. But during the winter, refuse accumulates around the homes of the Indians and Metis with the result that after the spring thaw there has to be a clean-up to improve the appearance of the community. In the summer of 1967 a brush cutting project was instituted that provided some employment and generally enhanced the appearance of the settlement.

Electricity is supplied by the D.O.T. using two 50 kw. generators. It is sold at 12¢ per kw, and as yet neither the Indian nor Metis population have been able to afford to have their houses wired for electricity.

## HEALTH

As stated earlier, community health is the responsibility of the Department of National Health and Welfare, who have established "Nursing Station" at most of the northern settlements.

The equipment and service facilities are fairly standard, and usually excellent. The Nursing Station at Fort Hope is representative of these institutions.

The dispensary, office, in-patient and staff living quarters are housed in one building, with the treatment/in-patient area being divided from the staff living quarters.

Apart from a large dispensary — treatment area these buildings are usually equipped to house four adult patients, two infants and two children as well as a nursing staff of two.

Refrigeration facilities for drugs, an X-Ray machine, dental and surgical tools, incubation and oxygen equipment are available at all these stations. Recently, Ski-doo type transportation has also been supplied for use in the winter.

An evaluation of the costs of replacement of these nursing stations has been estimated by the D.N.H.W. to be \$265,000 with an additional cost of \$6,000 for equipment. Operating costs of these establishments, exclusive of salaries, is approximately \$9,000 a year.

This nursing station is staffed by two R.N.'s and two Indians who handle the general duties of the establishment. Minor surgery, tooth extractions and general nursing are combined with pre-natal classes, public health visiting and school visits to form part of the work load of the nurses. Periodical visits by other medical staff from the Hospital at Inuvik are of considerable assistance to the nurses in dealing with local problems. Full discretion is allowed the nursing staff to evacuate patients to Inuvik for treatment at the hospital there.

The nurses at Fort Good Hope have an added responsibility by having to administer to the settlement at Colville Lake. Except for the periods of break-up and freeze-up, one of the nurses makes monthly visits to Colville Lake to hold a clinic.

During break-up and freeze-up, when planes are unable to land at the settlements, are the periods of greatest risk for seriously ill patients. During these periods radio contact with the doctors at the hospital at Inuvik provides all the aid possible until the arrival of emergency aircraft. This hazard has been considerably removed by the construction of an emergency air strip that can accommodate a small, wheel or ski equipped plane.

The heavy work load of the nurses can be seen on the following Tables. That the common cold and influenza are the major causes of illness can be deceptively simple until it is remembered that these isolated populations with their limited exposure to viral infections can, and do, become severely ill from these infections.

**TABLE 24**  
**FORT GOOD HOPE NURSING STATION**  
**CLINICAL ACTIVITY**

| Item  | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---|------|------|------|------|-----|------|------|------|------|------|------|------|-------|
| Patients treated  | 218  | 158  | 179  | 195  | 130 | 221  | 314  | 153  | 228  | 126  | 94   | 179  | 2,195 |
| Admissions to N.S.  | 3    | 3    | 3    | 1    | 2   | —    | 3    | —    | 1    | 3    | —    | 2    | 21    |
| Births at N.S.  | 1    | —    | 2    | 1    | 2   | —    | 2    | —    | 1    | —    | —    | —    | 9     |
| Evacuations to Hosp.                                      | 1    | 2    | 2    | 5    | —   | 3    | 2    | —    | 2    | 1    | —    | —    | 19    |
| Health Education<br>meetings & classes                    | —    | 2    | 2    | —    | —   | —    | 1    | 2    | —    | —    | —    | —    | 7     |
| Attendance  | —    | 9    | 11   | —    | —   | —    | 12   | 4    | —    | —    | —    | —    | 36    |
| Visits to schools   | 3    | 2    | 2    | 3    | 2   | 2    | —    | —    | —    | —    | 2    | 2    | 18    |
| Home visits — Public<br>health, treatment or<br>follow-up | 93   | 72   | 101  | 77   | 102 | 92   | 58   | 20   | —    | —    | —    | 33   | 648   |
| Total persons helped at<br>home.                          | 120  | 107  | 135  | 125  | 106 | 117  | 63   | 20   | 17   | 49   | 38   | 35   | 932   |
| <b>Nursing Staff Hours.</b>                               |      |      |      |      |     |      |      |      |      |      |      |      |       |
| Hours Nursing   | 112  | 80   | 164  | 120  | 190 | 158  | 143  | —    | 220  | 292  | 140  | 135  | 1,754 |
| Hours travelling  | 2    | —    | —    | 3    | 2   | —    | 5    | 7    | —    | —    | —    | —    | 19    |
| Hours doing office work.                                  | 117  | 80   | 102  | 103  | 102 | 156  | 201  | —    | 200  | 60   | 132  | 115  | 1,368 |

Source D.N.H. & W.

Table 25

## CLINICAL ATTENDANCE – NUMBERS &amp; CAUSE

Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Total

|                                       |    |    |    |    |   |    |    |    |    |    |    |    |     |
|---------------------------------------|----|----|----|----|---|----|----|----|----|----|----|----|-----|
| Common cold & influenza               | 16 | 12 | 3  | 10 | 3 | 11 | 65 | 20 | 45 | 17 | 11 | 14 | 227 |
| Bronchitis & other resp:<br>dis:      | 5  | 2  | —  | 1  | 8 | 3  | 2  | 3  | 9  | 2  | 1  | 7  | 43  |
| Gastrointestinal condition            | 2  | 1  | 9  | 5  | 4 | 10 | 45 | 38 | 9  | 2  | 2  | 5  | 132 |
| Malnutrition, anaemia,<br>underweight | —  | —  | —  | 2  | — | —  | 2  | 9  | 14 | 6  | —  | —  | 33  |
| Breast conditions                     | —  | —  | —  | —  | — | 1  | —  | —  | —  | 1  | —  | —  | 2   |
| Gynaecological condition              | 1  | 1  | 1  | —  | — | —  | 4  | 1  | 2  | 1  | 1  | —  | 12  |
| Prematurity                           | —  | —  | —  | —  | — | —  | —  | —  | —  | —  | —  | —  | —   |
| Other complic: of<br>pregnancy        | —  | —  | —  | —  | — | —  | —  | —  | 2  | 1  | —  | —  | 3   |
| Fractures, dislocations               | —  | 1  | —  | —  | — | 2  | —  | —  | —  | 1  | —  | —  | 4   |
| Cuts, bruises, sprains                | —  | —  | 3  | 1  | 3 | 3  | 40 | 17 | 10 | 5  | 5  | 12 | 99  |
| Other accidents-<br>(inc: burns)      | 1  | 1  | 3  | —  | — | —  | 3  | —  | 3  | —  | 3  | —  | 14  |
| Orthopedic cond,-<br>(Excl. acc.)     | —  | —  | —  | 1  | — | —  | —  | —  | —  | —  | —  | —  | 1   |
| Refractive errors.                    | —  | —  | 1  | 2  | — | —  | —  | —  | —  | —  | —  | —  | 3   |
| Other eye conditions.                 | 2  | 4  | 1  | 9  | 5 | 2  | 15 | 2  | 9  | 4  | 6  | 1  | 60  |
| Ear, nose, throat<br>conditions       | 12 | 6  | 14 | 7  | 5 | 6  | 8  | 12 | 16 | 7  | 9  | 11 | 113 |
| Skin conditions.                      | 6  | 13 | 12 | 4  | 5 | 3  | 36 | 40 | 57 | 8  | 4  | 13 | 201 |
| Infestations.                         | —  | —  | —  | 10 | — | 4  | 1  | 4  | 1  | 4  | —  | 6  | 30  |
| Dental conditions.                    | 3  | 9  | 4  | 1  | 2 | 2  | 15 | 1  | 4  | 2  | 6  | —  | 49  |
| Conditions of the<br>nervous system   | 1  | 1  | 3  | 2  | 1 | —  | 1  | 1  | 4  | —  | 1  | 1  | 16  |
| Arthritis & rheumatism                | 3  | 3  | 8  | 1  | — | —  | 6  | —  | 1  | 1  | 1  | 2  | 26  |
| Cardiovascular conditions             | —  | —  | 1  | —  | 2 | —  | 2  | —  | 4  | 1  | —  | —  | 10  |
| Diabetis Mellitus.                    | —  | —  | —  | —  | — | —  | —  | —  | —  | —  | —  | —  | —   |
| All other.                            | —  | 2  | —  | 1  | 1 | —  | 5  | 3  | —  | 1  | —  | 2  | 15  |

## ROYAL CANADIAN MOUNTED POLICE

The increasing number of government personnel in the settlements have gradually reduced the duties performed by the local R.C.M.P. officers. At present the prime responsibility of the Force is law enforcement, and crime prevention through counselling.

The detachment at Fort Good Hope consists of one R.C.M.P. officer and an Indian Special Constable who acts as interpreter and assistant. This detachment also provides law enforcement services for Colville Lake.

## THE JUDICIARY AND THE OFFICE OF CORONER

There is no local Justice of the Peace or Coroner. During the survey period it was found that the nearest Justice of the Peace was a non-Indian resident of Norman Wells, and the Coroner for the area was located in Inuvik.

The accused are taken to Norman Wells to appear at the Court of Summary Convictions there, and in the event of being convicted they are then taken to Yellowknife to serve the sentence.

## RELIGION

Almost all the Indians and Metis of the community are Roman Catholics. The mission here was opened by Father Grollier in 1859 since then there has always been a priest in attendance. In the last few years a missionary of the Northern Evangelical Missions has resided in the community, but as yet has no mission buildings.

## EDUCATION

The Department of Indian Affairs and Northern Development operates a two-room day school in the settlement. One teacherage is on the second floor of the school building, and the other, situated about 200 yards from the Mackenzie River, is a Panabode building with a cement basement.

Grades 1 to 7 are taught by one or two resident teachers.\* Children who progress past the 7th Grade are sent out to residential schools at Inuvik, Yellowknife or Fort Smith. A school workshop built next to the main school building is seldom used for the purpose due to a lack of tools and qualified teachers.

From the school attendance table given in the appendix, it can be seen that the average attendance for the year for Indian children is 73 per cent as opposed to 89 per cent for the Metis children. The latter appear to have offered no reason for non-attendance, while the highest proportion of reasons given by the Indian children for non-attendance was that they were out trapping with their families. The next most frequently recorded reasons for their non-attendance were ill health, helping at home and no reason.

These figures on absenteeism were not an indication of the number of families going trapping but rather that the children who were going trapping came from three families. It would appear that the extent to which a child misses formal education is to some extent related to the degree to which trapping is a family oriented activity.

## ADMINISTRATION

As stated earlier, the Administration in the settlements is the responsibility of the Northern Administration Branch of the Department of Indian Affairs and Northern Development. The duties of the Area Administrator, appointed by the Department, have already been mentioned. He is directly responsible to the Administrator of the Mackenzie at Fort Smith. From here the chain of command extends directly to the Branch in Ottawa.

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\*The school requirements are for two teachers, but it is not always possible to fill both positions.

## MAINTENANCE AND EQUIPMENT

Prior to 1966, very little vehicular equipment existed in this settlement. The D.I.A. & N.D. maintained a Bombadier Snowmobile, a half ton pick-up truck, and a boat and 18 h.p. motor. Prior to 1967 a small saw mill was operated locally but since the development of the sawmill at Arctic Red River in 1966 the equipment was dismantled and removed there.

As there has been a contractor resident in the settlement for the last two to three years the amount of vehicular equipment has steadily increased. It predominately the earth moving type, and two trucks for hauling gravel.

Much of the equipment used has been adapted and is used for a variety of purposes. The inventory is likely to vary over the years as more equipment is acquired or made locally. All of the equipment has to be serviced locally, and the contractor has a large heated garage for use during the winter.

## DOCKS AND ROADS

As the main part of the settlement is situated on the top of a terrace, access from the water is difficult. There are three tracks leading down the bank to floating docks and the road at either end of the settlement leads down to the water. Anchorage for float-equipped aircraft is in the Mackenzie River, where the strong current (reportedly flowing at seven miles per hour) may cause some difficulties. Boats are beached in Jack Creek until the water becomes too low in mid-summer.

Drainage conditions are excellent in most parts of the settlement, however, poor drainage occurs in the abandoned stream courses of Jack Fish Creek. The roads in these areas become impassable at times of heavy rainfall and during the peak run-off at break-up. A recently laid strip of boardwalk down to the centre of the settlement has considerably increased the comforts of pedestrian traffic.



Plate 3. Main street leading north east from the H.B.C. store.



Plate 4. Main street leading south west from the H.B.C., store.

## HOUSING

The residences of the whites are situated along the river bank and form the northern rim of the settlement. These houses are of modern bungalow style with regular cement basements and foundations. They are equipped with indoor plumbing, central heating and electricity. D.O.T. supplies the electricity for these houses and for a few recently installed street lights. The present generators do not meet the demands of the community and another is to be installed very shortly.

The largest number of Indian and Metis houses are of log construction and are chinked with moss. In the last four years, 17 new log houses have been built for the Indians and the rate of replacement of unsatisfactory housing has been highest in this community.

These new houses are well constructed and have several rooms on the ground floor. In some, lofts have been added as a storage area, but all of the houses have a small log cache nearby that is built on stilts, and gives the settlement a unique characteristic.

Indian and Metis houses are, with a few exceptions, heated by wood-burning stoves or kitchen ranges, and lighted by Coleman lamps. Sanitary needs are met by outdoor privies and used water is dumped on the ground near the house.

## COMMUNITY CLUBS

These have already been discussed. At Fort Good Hope the nurses are active organizers of the Women's Association activities, along with three Indian women. From discussions with the executive it appeared that members preferred the social activities of the club, and were reluctant to attend the business meetings. It was hoped that it would be possible to hold club meetings and activities in the community hall that was in the process of being repaired and winterized, and in this way accommodate a greater number of people at club meetings.

## ENTREPRENEURIAL ACTIVITY

### The Hudson's Bay Company

The removal of the Free Trader to Colville Lake has left the H.B.C. as the only retail outlet in the settlement. The Company is also the local fur buyer, and even through fur can be sent out to the auction houses in Edmonton, most of the fur sold in the settlement is traded through them.

### The Local Contractor

Since 1965 there has been a contractor resident in the settlement, and the duties previously undertaken by the D.I.A. & N.D. have been contracted out. However, as community improvement projects are completed, the contractor is going to be forced to rely on the service contracts to keep his operation going, and the costs of these will inevitably increase as other contracts become less available. This is unfortunately the problem facing all the contractors in these small communities, and seems to be a difficult situation to deal with as the growth of these settlement is so slow.

## POPULATION

The population figures for this community differ from both Cohen and Hurlbert in that another source was used for the compilation of the data.\* It would appear that while the population has increased slowly over the last ten years the proportion of females to males has also gradually increased. It must be noted that since 1948 there has been a nursing station with at least one resident nurse in the community, and what effect this has had on the increase in life-span and survival is difficult to determine.

TABLE 26  
BIRTH RATES, DEATH RATES, AND NATURAL INCREASE  
FORT GOOD HOPE (INCLUDING COLVILLE LAKE)

1958-1966

| Period  | Average Birth Rate<br>Per Year | Average Death Rate<br>Per Year | Average Natural<br>Increase per year |
|---------|--------------------------------|--------------------------------|--------------------------------------|
| 1958-59 | 19.7                           | 2.2                            | 17.5                                 |
| 60-61   | 17.8                           | 2.8                            | 14.8                                 |
| 62-63   | 19.6                           | 3.3                            | 16.2                                 |
| 64-65   | 10.7                           | 1.2                            | 9.3                                  |

\* For the settlement R.C.M.P. records were used.

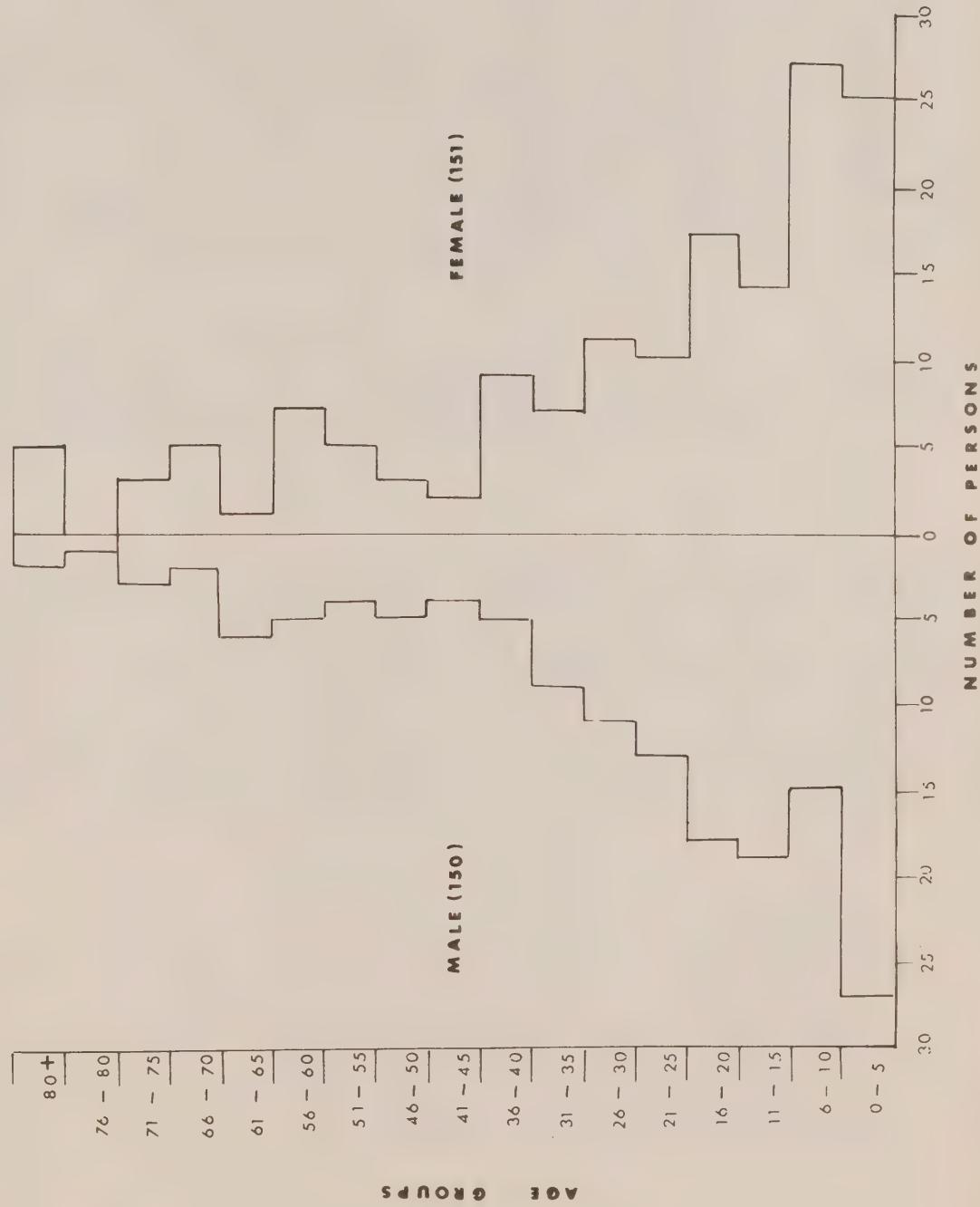
The increase in population appears to have been a result of a lowering of the death rate while a high birth rate has been maintained, rather than being a result of immigration. In fact, the figures show a steady increase despite small periodical out-migrations totalling five families and eleven single people (32 persons). As the marital status and present family size of these emigrants is not known, they have been excluded from the population census even though they are still shown on the band list.

The age-sex structure of Fort Good Hope as represented in Figure 10 shows that this population tends to be a young one. 42 per cent are under the age of 16 and 54 per cent are under the age of 20. As stated earlier, the smaller number of persons in the 36-55 age groups could possibly be related to epidemics that occurred throughout the Mackenzie Valley during the 1930's.

AGE - SEX STRUCTURE - FORT GOOD HOPE, 1966<sup>+</sup>

Figure 10

69



<sup>+</sup> Excluding whites

Source: Father, Brelton & LAND, Fort Good Hope



TABLE 27  
POPULATION BY AGE AND SEX FORT GOOD HOPE (INCLUDING COLVILLE LAKE)  
1951-1966\*

| Period                 | Males   | Females | Total   |
|------------------------|---------|---------|---------|
| 1951                   | —       | —       | 257**   |
| 1956-57                | 159     | 132     | 291     |
| 1958-59                | 169     | 146     | 315     |
| 1960-61                | 178     | 157     | 335     |
| 1962-63                | 187     | 171     | 358     |
| 1964-65                | 192     | 180     | 372     |
| 1966*** Fort Good Hope | 150 194 | 151 182 | 376**** |
| Colville Lake          | 44      | 31      |         |

\* RCMP records

\*\* Canadian Government Census

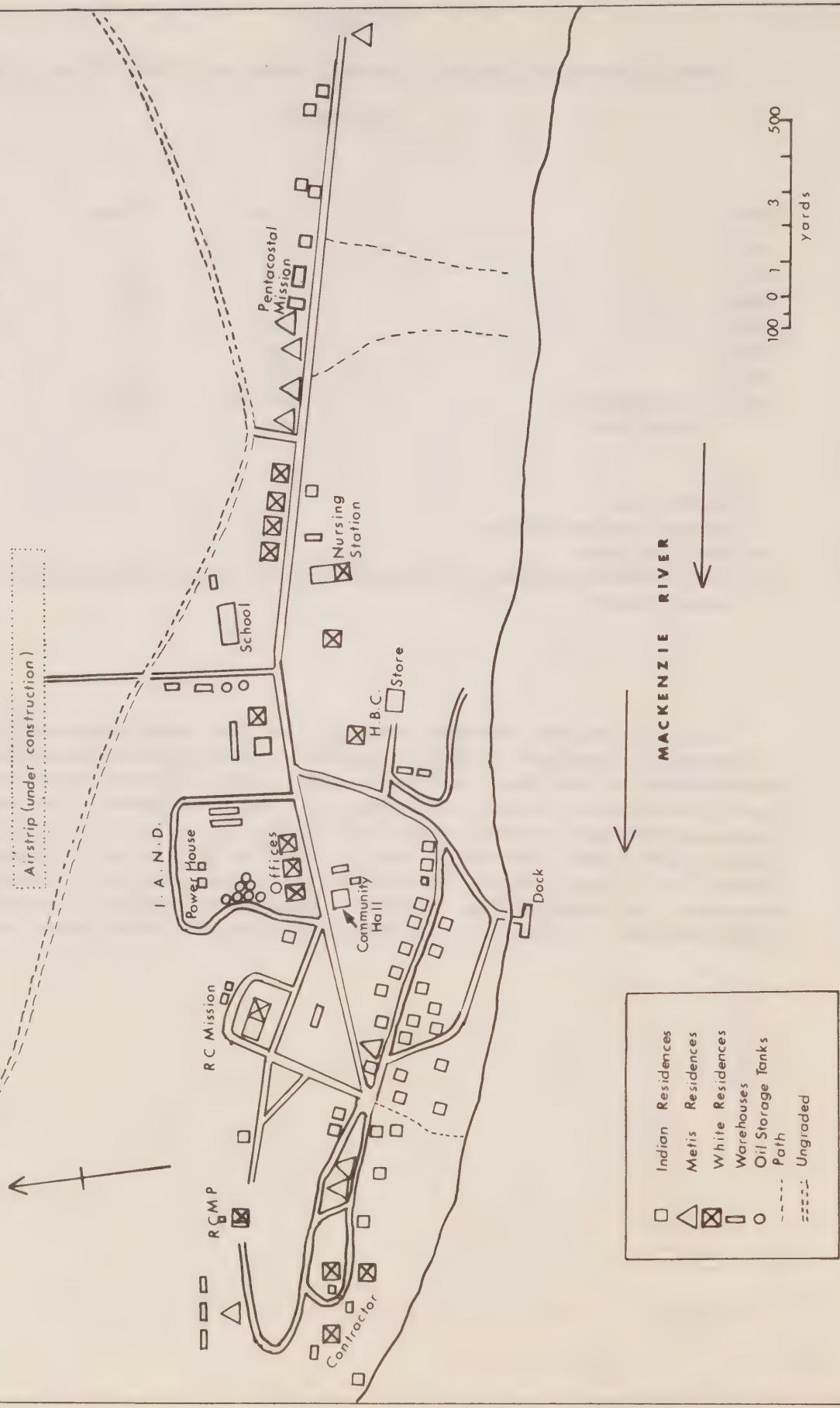
\*\*\* 1966 Field Survey

\*\*\*\* Not included in these figures are 32 numbers of the band who have at varying periods migrated and settled elsewhere.

In regard to the total population, the two sexes are almost equally represented, and of the 32 individuals that have emigrated 15 have been males and 17 females. The lack of dominance of males in the total population may have been a result of an increasing number of female births or of the survival of a larger number of female infants, or an increase in the longevity of females. Of the number of births occurring in 1966 there is an equal number of each sex. However in the under 16 year old age groups, there is a slight increase of females over males, whereas in the over 16 year old age group the trend is reversed. Table 27 shows that since 1956 there has been a steady increase in the number of women, the discrepancy in the numbers between the sexes has changed in ten years from -27 females to +1 if the Colville Lake group is excluded. If they are included in the figures the discrepancy ranges from -27 to -12.

Figure 11

## FORT NORMAN, N.W.T.



## FORT NORMAN

### LOCATION & SITE

The settlement of Fort Norman is situated on the high northern bank of the Mackenzie River which here flows in a northwesterly direction. Bear Rock, at the mouth of the Great Bear River is situated on the north shore of the Mackenzie down stream from Fort Norman. This is a prominence rising to 1,550 feet above sea level that forms a conspicuous landmark near the settlement.

Tertiary sandstone and conglomerate containing thin coal seams outcrop along the bank of the Mackenzie River and underlie the settlement. Two terraces rise from the level of the beach and most of the dwellings in the settlement are built on these terraces.

Behind the settlement to the north and away from the Mackenzie River is a broad, abandoned, meander scar formed when the Mackenzie River completely surrounds the settlement on the landward side. Still further north the land rises slowly towards a long lake which lies parallel to the Mackenzie River. This lake (which is locally referred to as Plan Lake) occupies the lower part of another, higher, and older channel in the Mackenzie River. Between the two elongated depressions is a ridge upon which an airstrip is in the process of construction.

The settlement proper has three levels: —

- a. The docking area, or beach, with no buildings
- b. A terrace 40 feet above the river, on which the Indian village has been built
- c. A terrace 70 feet above the water, on which the main part of the settlement is located

Severe dissection of terraces and roads down to the river occurs in the spring when run-off is at a maximum. Since the low-lying land and the organic terrain contained in it, runs parallel to the river, future expansion of the settlement will have to be between the depression and the river resulting in an elongated settlement pattern extending in an easterly up-stream direction.



Plate 5. Two levels of terraces with Anglican church in the foreground and Roman Catholic Church in the background.



Plate 6. Middle terrace. Indian and Metis housing. Bear Rock in the background.

#### TRANSPORTATION

The community is serviced from Norman Wells by bi-weekly flights of Northward Aviation Ltd. During freeze-up and break-up the community is isolated and an emergency air strip to the north of the settlement is under construction. During the summer the settlement is also serviced by the N.T.C.L. barge system.

#### COMMUNICATIONS

Apart from the bi-weekly air service, C.N., maintains the telephone system in the community and a landline service to points external to it. There are 5 radio-telephone sets maintained by various agencies in the settlement.

#### SERVICES & UTILITIES

At present, water for the settlement is drawn from the Mackenzie River. This water shows a high degree of sediment and has to be allowed to stand before being used. During the high run-off periods this water would appear to present a health hazard as it is not boiled before consumption. A road is in the process of being cut through to Great Bear River which is the proposed water source. The Indians state, however, that this water is undrinkable due to high mineral content and there appears to be some superstition about drinking water from this source.

Water delivered to residents costs 2¢ a gallon and bulk water storage facilities exist only in the residences of the whites. Water is delivered once a week or when necessary. When the road is cut through to the Great Bear River the water hauled to the community will be clearer but as far as Indians and Metis are concerned they will derive little benefit from it as they are no more likely to be able to afford to pay for hauled water than they are at present. During the summer, three 1,000 gallon water points are situated throughout the community and maintained by the Department. These to some extent alleviate the water haulage problem.

Electricity is supplied by the Department of Indian Affairs and Northern Development at a cost of 12c per kwh. Street lighting has been installed and is in use, but completion of the service is not possible due to the inadequacy of the present generators.

Extension of electrical services to the Indian and Metis is hampered by the cost of the provision of the service and by their inability to afford it. The present 50 kw. generators are inadequate to handle the demand of the community and a 100 kw. machine is to be installed.

The garbage collection and disposal service is operated by the contractor, who until last year also handled sewage disposal requirements of the white residences. This function has temporarily been taken over by the Department. In spite of the garbage collection service, refuse collects around the houses of the Indian and Metis with the result that after the spring thaw there has to be a community clean-up to improve the appearance of the settlement.

During the summer of 1967, at Fort Norman a bush and grass cutting project was instituted. It provided some employment and generally enhanced the appearance of the settlement.

## HEALTH

The nursing station at Fort Norman is housed in a frame building that was erected in 1948. While the lay-out of the building is not as convenient as the more recently constructed nursing stations the equipment and facilities are similar.

As the staff living quarters are less differentiated from the patient/treatment area the nurse appears to be less able to detach herself from the work situation during periods of off duty. A feeling of a lack of privacy was repeatedly stressed by the nurse.

This nursing station also was equipped for a staff of two nurses but at the time of the survey had only one nurse in residence. The work load for one nurse coping with a settlement the size of Fort Norman was heavy indeed. Her off duty periods were erratic and minimal.

This settlement also is subject to the hazard of patient evacuation during break-up and freeze-up, but the completion of the emergency airstrip should alleviate the problem.

The accompanying tables indicate that the nurse at Fort Norman has a very heavy work load. The causes of illness in the community are similar to those of the other settlements, with upper respiratory tract infections and associated conditions being the most important causes of illness.

**TABLE 28**  
**FORT NORMAN NURSING STATION**  
**CLINICAL ACTIVITY**

| Item  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Patients treated                                    | 255 | 164 | 211 | 241 | 139 | 239 | 192 | 371 | 339 | 344 | 224 | 225 | 2,964 |
| Admissions  | 2   | 5   | —   | 1   | —   | 1   | 3   | 3   | 3   | 4   | 1   | —   | 23    |
| Births  | 1   | 1   | —   | —   | —   | —   | 1   | 1   | —   | —   | —   | —   | 4     |
| Evacuations to Hosp                                 | —   | 8   | 4   | 2   | —   | 2   | 6   | —   | 3   | 2   | 4   | 3   | 34    |
| Health Education meetings & classes                 | 2   | 4   | 2   | 2   | 1   | —   | —   | —   | —   | —   | —   | 1   | 12    |
| Attendance  | 27  | 70  | 28  | 20  | 4   | —   | —   | —   | —   | —   | —   | 5   | 154   |
| Visits to schools                                   | 3   | 4   | 2   | 5   | 4   | —   | —   | —   | 2   | 2   | 2   | 1   | 25    |
| Home visits — public health, treatment or follow-up | 152 | 153 | 122 | 91  | 91  | 121 | 56  | 76  | 152 | 134 | 117 | 151 | 1,416 |
| Total persons helped at home.                       | 372 | 260 | 284 | 222 | 220 | 265 | 88  | 159 | 332 | 446 | 298 | 299 | 3,245 |
| <b>Nursing Staff Hours.</b>                         |     |     |     |     |     |     |     |     |     |     |     |     |       |
| Hours Nursing                                       | 227 | 223 | 111 | 107 | 87  | 177 | 133 | 158 | 173 | 257 | 142 | 134 | 1,929 |
| Hours travelling                                    | 57  | 30  | 29  | 18  | 20  | 22  | 4   | 14  | 28  | 28  | 20  | 23  | 293   |
| Hours doing office                                  | 41  | 38  | 45  | 45  | 67  | 67  | 59  | 49  | 29  | 35  | 41  | 42  | 558   |

Source D.N.H.&W.

TABLE 29  
CLINICAL ATTENDANCE – NUMBERS & CAUSE.

|                                     | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Common cold & influenza             | 79  | 37  | 106 | 42  | 4   | 4   | 40  | 37  | 6   | 33  | 15  | 8   | 411   |
| Bronchitis & other resp: dis:       | 22  | 7   | 10  | 8   | 1   | 1   | 3   | 5   | 1   | 3   | 7   | 2   | 70    |
| Gastrointestinal Conditions         | 14  | 11  | 12  | 13  | 8   | 14  | 10  | 19  | 54  | 9   | 15  | 12  | 191   |
| Malnutrition, anaemia, under-weight | 2   | —   | —   | 2   | 1   | 1   | 1   | 1   | —   | —   | 1   | 6   | 15    |
| Breast conditions                   | —   | 1   | —   | —   | —   | —   | 1   | —   | —   | —   | —   | —   | 2     |
| Gynaecological conditions           | 3   | 8   | 3   | 2   | 5   | 8   | 3   | 5   | 5   | 8   | 4   | 6   | 60    |
| Prematurity                         | 1   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | 1     |
| Other complic: of pregnancy         | 2   | 1   | —   | —   | 1   | 1   | —   | 1   | 2   | 3   | 2   | —   | 13    |
| Fractures, dislocations             | —   | 2   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | 2     |
| Cuts, bruises, sprains              | 9   | 8   | 12  | 18  | 13  | 15  | 18  | 28  | 21  | 16  | 11  | 14  | 183   |
| Other accidents – (inc: burns)      | 8   | 8   | 7   | 10  | 3   | 10  | —   | 5   | 3   | 10  | 11  | 8   | 83    |
| Orthopedic cond. – (Excl. acc.)     | 2   | 3   | 6   | 2   | 3   | —   | —   | —   | 4   | 7   | 4   | 4   | 35    |
| Refractive errors.                  | 1   | —   | 2   | 3   | —   | 1   | —   | —   | 1   | 1   | 2   | —   | 11    |
| Other eye conditions.               | 5   | 11  | 3   | 5   | 3   | 1   | 3   | 4   | 9   | 8   | 4   | 8   | 64    |
| Ear, nose, throat conditions        | 14  | 18  | 21  | 11  | 5   | 10  | 18  | 38  | 13  | 44  | 21  | 17  | 230   |
| Skin conditions.                    | 18  | 8   | 14  | 5   | 7   | 6   | 21  | 52  | 5   | 7   | 11  | 8   | 162   |
| Infestations.                       | 3   | 1   | —   | 1   | 1   | —   | —   | 1   | 2   | 2   | —   | —   | 11    |
| Dental conditions.                  | 4   | 1   | 8   | 8   | 6   | 6   | 1   | 7   | 1   | 1   | 2   | 3   | 48    |
| Conditions of the nervous system    | —   | 1   | 2   | 1   | 2   | 8   | 2   | 2   | 2   | 2   | 3   | 2   | 27    |
| Arthritis & rheumatism              | —   | —   | —   | —   | 4   | 3   | 3   | 2   | 1   | 3   | 3   | 4   | 23    |
| Cardiovascular conditions           | —   | —   | —   | —   | 2   | —   | 3   | 1   | 2   | 1   | —   | 5   | 14    |
| Diabetis Mellitus.                  | —   | —   | —   | —   | —   | —   | —   | 4   | —   | —   | —   | —   | 4     |
| All other.                          | 19  | 4   | —   | —   | —   | 3   | 23  | 3   | 2   | 7   | 3   | 5   | 69    |

Source: D.N.H.&W.

## THE ROYAL CANADIAN MOUNTED POLICE

The R.C.M.P., detachment in this settlement consists of two police officers who provide the law enforcement services for Norman Wells Fort Norman and Fort Franklin. One officer resides at Norman Wells during the summer and returns to the detachment at Fort Norman before freeze-up.

## RELIGION

The religious facilities of this community comprise a Roman Catholic Mission church, hall and residence. A small Anglican church built of squared logs is abandoned and boarded up. Two Pentecostal Missionaries have a residence and church hall in the eastern part of the settlement among the Metis houses.

The largest proportion of the Indian and Metis population are Roman Catholic, but even without the guidance of a resident Anglican missionary approximately one third of the population have maintained their affiliation to this religion.

## EDUCATION

The Department of Indian Affairs and Northern Development operates a two classroom Federal day school in the settlement. One teacherage is on the second floor of the school building, another is in a small frame dwelling about 200 yards along the upper level road. There is a small school workshop next to the main building. Its use and usefulness are dependant on the availability of a qualified teacher.

Another classroom was being added to the school in the summer of 1967, and a hostel was in process of construction.

School attendance for the year of the Indian children was 54.5 per cent as opposed to 94.9 per cent of the Metis children. Of the reasons given for nonattendance by the Metis children, the most commonly recorded has been that of illness, or no excuse at all was offered. The highest proportion of reasons for nonattendance of India children was illness or that they were out trapping with their families. This patterns is similar to that of Fort Good Hope in that a few families with a large number of school age children can distort the picture. At Fort Norman 3 families of this type account for most of the absenteeism noted as having "gone trapping with families".

The introduction of a local hostel might provide some incentive for more adults to go trapping. But as these local hostels are small and can accommodate approximately only a dozen children, their value to the community is limited as an agent to facilitate increasing numbers of adults to go trapping. They are rendered even less effective in this respect if they are used to house children whose female parent has been hospitalized. A third disadvantage is that the child, by being left in the hostel, learns little more of the skills of the adults in relation to their life in the bush, and is less exposed to the acculturative processes than a child at residential school in a large center. Nor does this child benefit from the facilities and levels of education that are afforded in the residential school, where most classes do not have a mixture of grade. Even as a palliative counter-measure to the problems facing the Department in terms of education or increased earnings through more intensive trapping activity, these small local hostels would appear to be of dubious value. As a short-term holding base for children whose mothers (or both parents) have been hospitalized, or removed from the household, this type of institution fills a need. If the parent's removal from the home is on a repetitious short-term basis or on a long-term basis, these children might be better off in a residential school.

Another type of question that could arise from the admission of children whose parents are going trapping, is whether one child from each of a number of families be admitted, or a larger number of children from a smaller number of families. To the first part of the question it might be suggested that one child from a large family makes very little difference in the mobility of the family, whereas, if all school aged children are admitted from a small number of families, the efficiency of the institution as a means of assisting people to go trapping for long periods, is limited.

## ADMINISTRATION

This settlement also has a resident Area Administrator appointed by the D.I.A. & N.D. His status, responsibilities and duties are similar to those of his counterpart at Fort Good Hope, but in addition to performing the administrative duties at Fort Norman this area administrator is responsible for the supervision of the acting area administrator at Fort Franklin. This required frequent trips to the settlement, and the maintaining of radio contact with the acting area administrator.

## MAINTENANCE & EQUIPMENT

In comparison to the other settlements, the D.I.A. & N.D. maintains a fairly wide range of equipment in this community that is listed below.

|  |             |
|--|-------------|
| *5 tracked personnel carriers<br>(including Bombadier Snowmobiles) | \$ 33683.00 |
| 6 wheeled farm tractors  | \$ 21146.00 |
| 2 road graders   | \$ 21280.00 |
| 1 panel truck  | \$ 3057.00  |
| 1 fire truck   | \$ 13285.00 |
| 1 flat bed truck   | \$ 4929.00  |
| 1 sewage truck   | \$ 12807.00 |
| 1 water truck  | \$ 12000.00 |
| 2 roller wobbly wheel  | \$ 3400.00  |
| 2 tractors   | \$ 56960.00 |
| 1 crawler shovel   | \$ 38497.00 |
| 1 self propelled scraper   | \$104263.00 |
| 1 truck shovel   | \$ 23929.00 |
| 1 concrete mixer   | \$ 5576.00  |
| 1 dragline excavator   | \$ 14865.00 |
| 4 air compressor   | \$ 36342.00 |
| 2 fork lifts   | \$ 13073.00 |
| 2 fire pumps   | \$ 1951.00  |

\*Source D.I.A.N.D.

There is a large combined two bay metal garage and tool warehouses housing the fire truck, vehicles which are in the process of being repaired, and a fairly large selection of tools and spare parts.

One Indian mechanic is employed full time on an hourly basis, and is under the supervision of the powerplant operator, who is also responsible for the maintenance of equipment.

With the contracting out of the water delivery, garbage and sewage disposal services some of this equipment has been leased to the contractor. The accumulation of equipment in this settlement has also been for the purpose of sharing it with the settlement of Fort Franklin when the roads and airstrip have been completed at Fort Norman.

## DOCKS AND ROADS

A floating dock provides anchorage for float-equipped aircraft and barges on the Mackenzie River. Small boats and canoes are pulled up on the beach. The current in the Mackenzie River reaches about three to four miles per hour and that of Great Bear River about three to seven miles per hour. The Mackenzie River at this point is more than one mile wide and the width of Great Bear River varies between 150 and 350 yards. The latter is 30 feet deep at the mouth.

Drainage conditions are excellent in most parts of the settlement. The roads at Fort Norman are even more extensive than those of Fort Good Hope and Fort Franklin, and are better constructed. But at periods of heavy rainfall they become very muddy and difficult to traverse for both motor and pedestrian traffic. Drainage ditches along the sides of the roads and through the lower terrace to some extent alleviate the problem of drainage. An absence of the adverse effects of permafrost on buildings may be attributable to the site of the settlement and to the relatively well drained river banks.

## HOUSING

The community is divided into three levels due to a terracing effect of the terrain. An Indian and Metis residential sector is located along the center terrace and the contractor and his family live at the north end of this zone. On the upper terrace are located the residences of the whites, the R.C. Church, the H.B.C. Store, the school, nursing station and government offices. Residences may be in the same building as the place of work or in a separate building. At the southern end of this zone there is a mixture of Indian and Metis housing.

Some of the houses of the whites are of an older types of frame dwelling constructed ten to fifteen years ago. Those being constructed during the summer of 1967 were modern bungalow type dwellings built on gravel pads and lacking a basement. Except for these newer buildings which have electrical cooking facilities, fuel oil is used for heating, kitchen stoves and hot water heaters. All these houses are equipped with indoor plumbing and sewage tanks.

Most of the Indian and Metis houses are of log chinked with moss, and have several rooms on the ground floor. The older houses also have a loft above. These houses are, with few exceptions, heated by wood-burning stoves or kitchen ranges, some are wired for electricity or equipped with plumbing. All have outdoor toilets. The used water is dumped on the ground.

In the last few years there has been a gradual replacement of older log houses by a frame type structure. The number of new houses constructed has varied from year to year according to the needs of all the settlements in the area. To date, 6 new bungalow type frame houses have been built for the Indians.

## COMMUNITY CLUBS

As with the other settlements the number of community clubs and the extent of their activities have been dependant on the white population. Fort Norman at present has a Recreational Club whose principal function is the showing of movies. Last winter a sports day was organized with races and competitions of various sorts. The whole community turned out to participate or enjoy the events, and the project appears to have been a great success.

In spite of the fact that the executive of the club are all local people, the Ladies Association functions spasmodically as there appears to be a considerable amount of difficulty in developing participation by the Indian and Metis women.

## ENTREPRENEURIAL ACTIVITY

### **The Hudson's Bay Company**

In this settlement also, the Company is the only retail outlet and fur buyer, and as with Fort Good Hope, most of the fur traded in the settlement is done so through the Company rather than being sent out to the auction houses in Edmonton.

### The Local Contractor

The contractor in Fort Norman has resided in this settlement for many years. He has married a local woman and raised a family here. With the increase in community services and development projects he acquired and leased equipment which enabled him to compete for contracts. At present, with the assistance of his three sons, he provides the water delivery, and garbage and sewage collection services for the community. He also holds the contract for the building of the emergency airstrip.

During the summer his family operate a snack bar.

### OTHER ENTREPRENEURIAL ACTIVITIES

Under this heading must come the handicrafts produced in the settlement. As stated earlier, it was difficult to determine the amount of income derived from the sale of handicrafts when these were not sold to a designated purchaser.

At Fort Norman there appeared to be more leather and bead work produced for sale both locally and to the Catholic Mission. The Catholic missionary encouraged the making of these handicrafts by importing beads for resale to the Indians at a very small profit, and by acting as a purchasing agent for the better quality items that were shipped out for resale.

Other white members of the community readily purchased whatever bead work was available either for their own use or to give as presents. In this settlement beaded handicrafts for sale were much more in evidence than they had been at Fort Good Hope.

### POPULATION

Until 1951 the people of Fort Norman and those of Great Bear Lake were included as a group for recording of vital statistics and other administrative data. Up to this point it is difficult to differentiate between the two groups.

The population structure, and the number of residents in the community are affected to the same extent by the cyclical seasonal activities, and the return or departure of the school children.

If the population is analyzed in broader terms than that of actual residence at any particular time, certain general characteristics are observable. One of these is that Fort Norman is a settlement that has a large Metis population.

Weir has given a table of the natural increase of the population, that has been reproduced in figure 12. Of this community he reports,

"the population of the settlement has grown slowly over the last 15 years ranging from a low of 195 in 1951 to a high of 258 in 1961. Rather than a net immigration, this growth is largely the result of the lowering of the death rate while a relatively high birth rate was maintained. In the year 1961 to 1965 the population declined from 258 to 246. During this period 27 persons emigrated and the natural increase was lowered. The immigration of one large family from Fort Franklin tended to offset this out-migration . . . the Metis have a greater tendency to leave the community than the Indians."

Figure 12

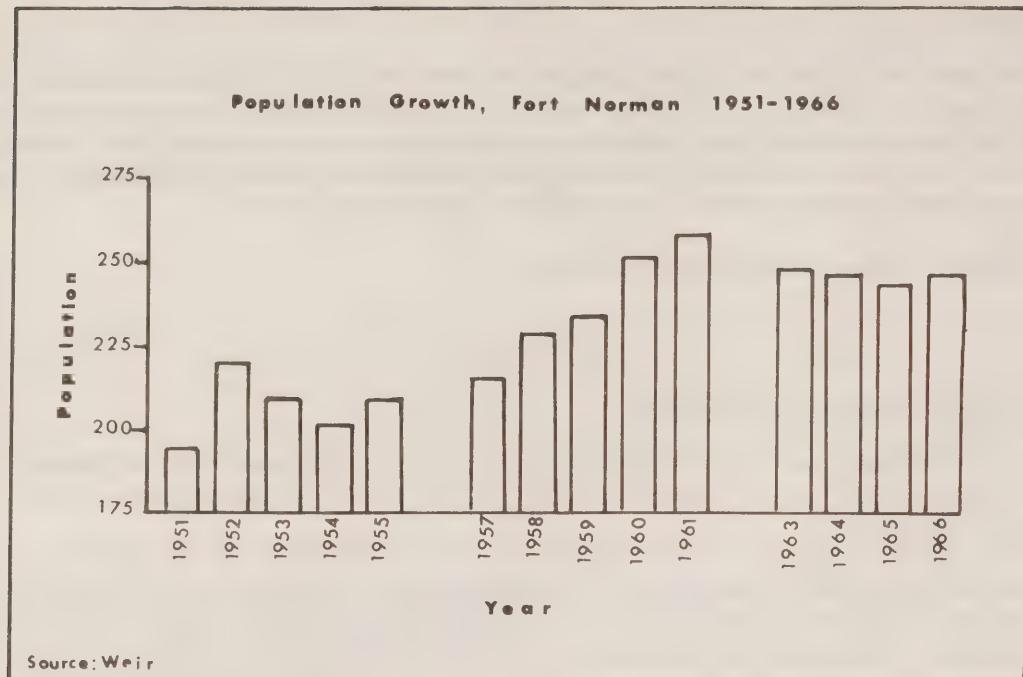


TABLE 30 – BIRTH RATES, DEATH RATES, AND NATURAL INCREASE

## FORT NORMAN, 1951 – 1965\*

| Period    | Average birth rate<br>per year | Average death rate<br>per year | Average Natural<br>Increase per year |
|-----------|--------------------------------|--------------------------------|--------------------------------------|
| 1951-1955 | 30.9                           | 17.4                           | 13.5                                 |
| 1956-1960 | 27.1                           | 9.6                            | 15.1                                 |
| 1961-1965 | 16.9                           | 7.9                            | 9.0                                  |

\*Source: Weir

The age-sex structure of the community as represented in Figure 13 shows that it is rapidly developing into one that will be dominated by a young population. At present 57 per cent of the population is over the age of 16, and of this only 4 per cent are over the age of 65.

The large contraction in the number of people in the 25-45 age group may be a result of high mortality rates during the epidemics of the early 20th century. The fact that there has been a nursing station and a registered nurse resident in the community since 1948 might in some measure account for the steadily decreasing average death rate given in table 30.

The dominance of males in this population is only 110 per 100 females, and is smaller than the ratios for the Northwest Territories and Yellowknife in 1961. The dominance of males in this settlement does not appear to be a result of immigration.

Figure 13

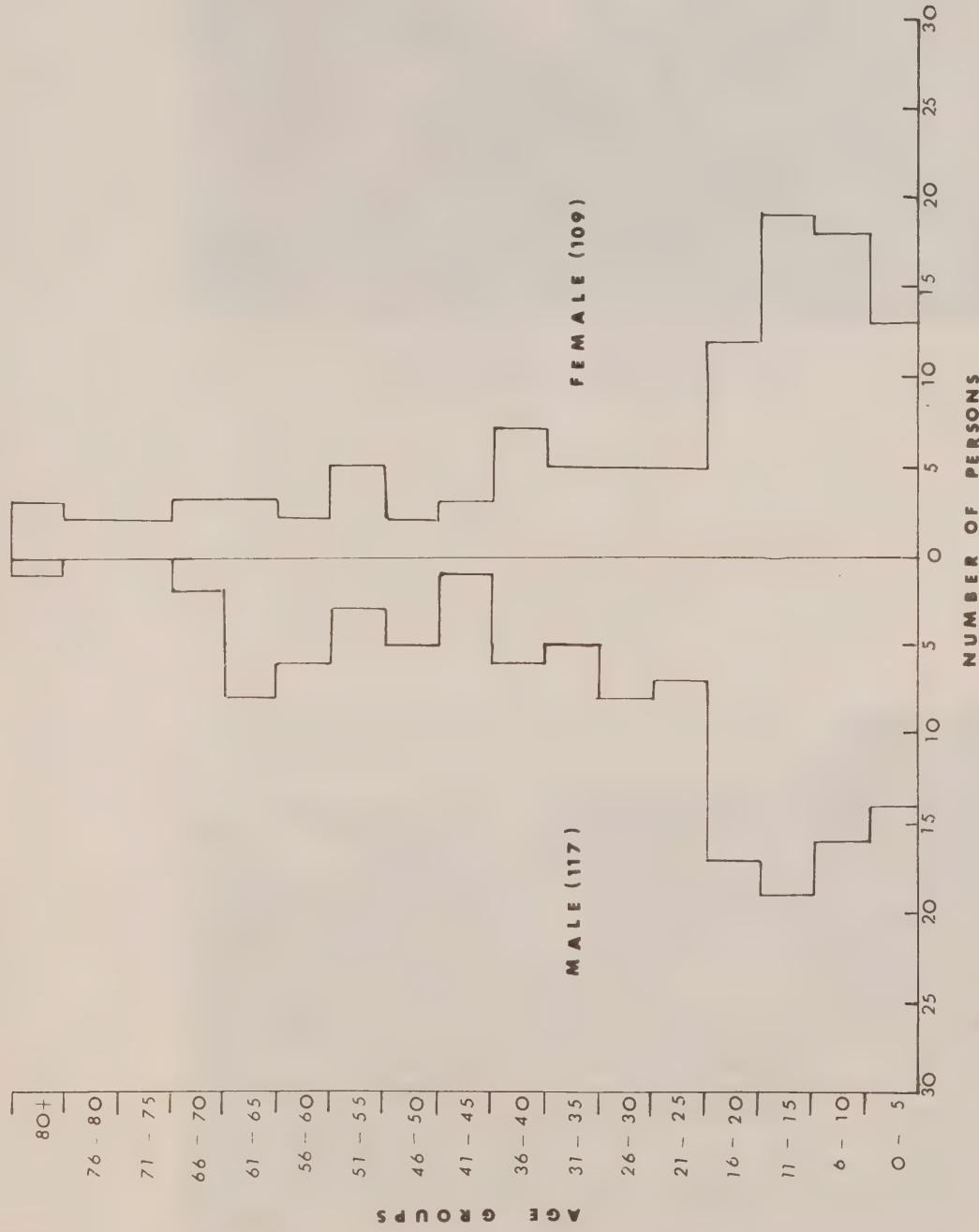
AGE-SEX STRUCTURE - FORT NORMAN, 1966<sup>+</sup><sup>+</sup>Excluding whites





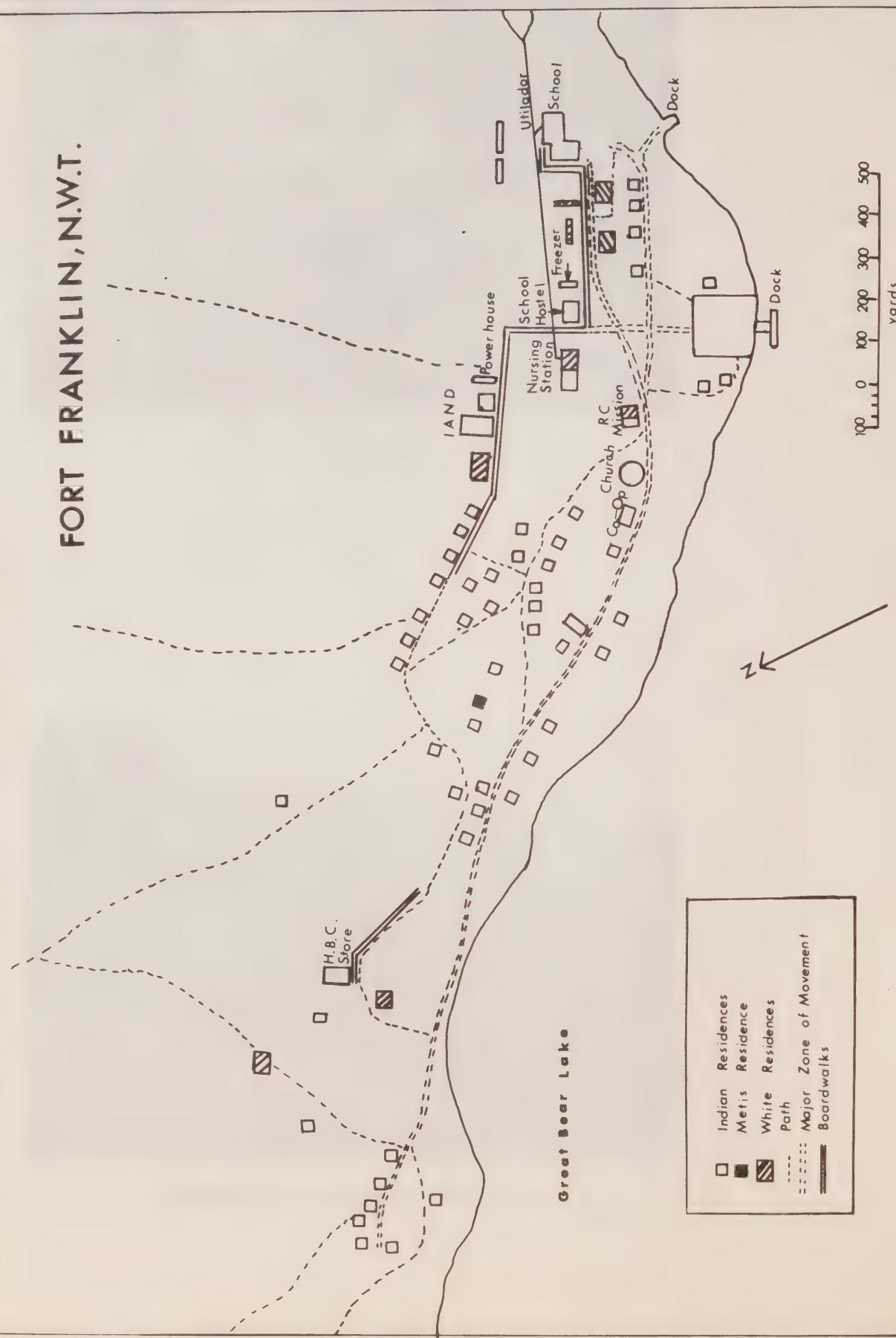
Plate 7. A summer camp at Kelly Lake.



Plate 8. Tuning Indian drums for a drum dance.

Figure 14

## FORT FRANKLIN, N.W.T.



## FORT FRANKLIN

### LOCATION & SITE

The settlement of Fort Franklin is located at the western extremity of Keith Arm on the south-western shore of Great Bear Lake. It is situated five miles northeast of the entrance into Great Bear River which flows from the lake into the Mackenzie River.

The settlement is situated on a relatively level area of unconsolidated material consisting of lake deposits of silt, sand and clay. Extensive ridges of sand and gravel surround the settlement. They are interspersed by small areas of poor drainage in hollows and small stream valleys. No large or significant streams enter Great Bear Lake at the settlement, but the Grey Goose River enters the lake through a small lagoon or bay about a mile to the west of Fort Franklin.

Throughout the length of the settlement the ground slopes towards the lake. The eastern area of the settlement, from approximately the Roman Catholic mission eastwards towards the school, is on the edge of a wide alluvial fan of a drainage course which originates several miles to the north. Drainage of the settlement is relatively poor due to the insulating effect of a deep layer of organic material and the resulting nearness to the surface of the active zone of the permafrost. Water travels on the surface or through the superficial humus layer on top of the frozen sub-soil. The result is perpetually wet ground throughout the settlement. Some relief from the damp surface condition has been obtained by digging trenches in the rear of the settlement and to the lake-front. Some laterals have also been dug, and almost all of these are adjacent to the school and behind the mission.

### TRANSPORTATION

The community is served by weekly flights of Northward Aviation Ltd., from Norman Wells. During the summer, supplies are also brought in by barge. Break-up occurs in May–June and freeze-up occurs in October–November. During these times the community is isolated, except for over-land travel.

### COMMUNICATIONS

The C.N. telephone system to this community was in the process of installation, and the service was unreliable. Apart from the weekly air service the chief means of inter-settlement communication was via radio-telephone. The mission, D.I.A. & N.D., the nursing station and the H.B.C. all have radio-telephone sets and scheduled hours for communicating with their respective networks. C.N. traffic is handled by the H.B.C.

### SERVICES & UTILITIES

Unlike the other communities, six Indian residences have electricity installed. This is bought at 12 cents per Kwh. The Department of Indian Affairs and Northern Development maintains the diesel generators supplying the community with power, but the capacity of the machines is only just able to meet the demands of the community and a larger unit is to be installed.

The Indians and Metis of Fort Franklin have the same problem in regard to water storage and disposal as do the people of the other settlements. Showers in the school are used by the students, but the facilities are inadequate to service the entire community. Water is obtained from the lake and pumped directly into indoor pressure tanks in the government buildings.

Sewage from the Nursing Station, school and the new teacherage is piped through a heated utilidor system to a sewage lagoon approximately 200 yards east of the school. Periodically the system freezes during the winter. Other residences are equipped with septic tanks that require pumping and disposal of contents.

The outside toilets and used water disposal of the Indians are similar to those of the other communities. There is a weekly garbage collection service contracted out to the co-op, but this community also requires a spring clean-up due to the litter around the houses.



Plate 9. An eastward view. The Nursing Station, Hostel and School Complex.



Plate 10. A westward view. Indian Houses, the Roman Catholic Church and Mission.

## HEALTH

The new nursing station built at Fort Franklin was completed early in 1966. Prior to this a small log cabin had been used as a dispensary and residence by the nurse from Norman Wells when she visited the settlement. Since the opening of the present building, two nurses have been resident in the community.

Fort Franklin is the only other community that does not have an emergency airstrip, and during the periods of break-up and freeze-up the community is inaccessible when the ice is unsafe to land on. Patient evacuation during this period might possibly be accomplished by helicopter from Inuvik.

As the accompanying tables show, the nurses at this nursing station have a heavy work load. The causes of illness appear to be similar to those of the other settlements except that there appears to be a higher incidence of skin conditions in this community. This is the only settlement that has a community health worker as an auxilliary to the nursing staff, and a large proportion of the health education classes can be attributed to her projects. A year previously, an Indian woman from Fort Franklin was given a three month course by the D.N.H. & W., and returned to the community as a health worker. This woman is also on the Board of the co-operative, and appears to have a considerable amount of influence in the community.

**TABLE 31**  
**FORT FRANKLIN NURSING STATION**  
**CLINICAL ACTIVITY**

| Item  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Patients treated                                    | 231 | 223 | 343 | 573 | 556 | 419 | 242 | 380 | 299 | 692 | 591 | 581 | 5130  |
| Admissions  | 1   | 1   | 1   | 2   | 2   | 2   | 1   | 1   | 1   | 44  | 3   | —   | 19    |
| Births  | —   | —   | 1   | 1   | —   | —   | —   | —   | —   | —   | 1   | —   | 3     |
| Evacuations   | —   | 5   | 2   | 5   | 3   | —   | 7   | 1   | 7   | 1   | 7   | —   | 38    |
| Health Education meetings & classes                 | 5   | 6   | 9   | 11  | 11  | 8   | —   | 1   | 1   | 7   | 6   | 11  | 76    |
| Attendance  | 65  | 160 | 248 | 219 | 172 | 160 | —   | 5   | 9   | 112 | 268 | 264 | 1682  |
| Visits to schools                                   | 5   | 5   | 7   | 8   | 10  | 4   | —   | —   | 1   | 8   | 8   | 8   | 64    |
| Home visits — public health, treatment or follow-up | 39  | 31  | 64  | 60  | 37  | 35  | 23  | 50  | 85  | 70  | 49  | 59  | 602   |
| Total persons helped at home.                       | 39  | 27  | 85  | 127 | 85  | 46  | 27  | 97  | 171 | 130 | 87  | 103 | 1024  |
| <b>Nursing Staff Hours</b>                          |     |     |     |     |     |     |     |     |     |     |     |     |       |
| Hours travelling                                    | 128 | 133 | 238 | 224 | 222 | 171 | 126 | 243 | 170 | 217 | 201 | 208 | 2281  |
| Hours travelling                                    | —   | —   | —   | —   | —   | 6   | —   | 8   | —   | —   | —   | —   | 14    |
| Hours doing office work.                            | 46  | 15  | 104 | 89  | 117 | 120 | 51  | 95  | 77  | 93  | 97  | 121 | 1025  |

**TABLE 32**  
**CLINICAL ATTENDANCE – NUMBERS & CAUSE**

|                                     | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Common cold & influenza             | 30  | 13  | 29  | 100 | 68  | 17  | 29  | 20  | 46  | 129 | 27  | 13  | 521   |
| Bronchitis & other resp: dis:       | 6   | —   | 3   | 3   | 7   | 2   | 2   | 3   | 3   | 8   | 3   | 2   | 42    |
| Gastrointestinal conditions         | 4   | 2   | 9   | 10  | 23  | 10  | 7   | 7   | 81  | 7   | 10  | 2   | 172   |
| Malnutrition, anaemia, under-weight | —   | —   | —   | 1   | 1   | —   | —   | 1   | 1   | —   | —   | —   | 4     |
| Breast conditions                   | —   | 2   | 1   | 2   | 4   | —   | —   | —   | 1   | —   | 2   | —   | 12    |
| Gynaecological conditions           | —   | —   | 2   | 2   | —   | 2   | 2   | 2   | 2   | 1   | 5   | 8   | 26    |
| Prematurity                         | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | 1   | —   | 1     |
| Other complic: of pregnancy         | —   | —   | —   | 1   | —   | —   | 2   | —   | —   | —   | 1   | —   | 4     |
| Fractures, dislocations             | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —     |
| Cuts, bruises, sprains              | 4   | 4   | 11  | 7   | 12  | 18  | 11  | 11  | 12  | 17  | 6   | 15  | 128   |
| Other accidents-(inc: burns)        | 3   | 2   | 5   | 6   | 4   | —   | 3   | 3   | 7   | 3   | 1   | 6   | 43    |
| Orthopedic cond,-(Excl. acc.)       | —   | 4   | —   | —   | 1   | —   | —   | —   | —   | —   | —   | —   | 5     |
| Refractive errors.                  | —   | —   | —   | —   | 1   | —   | —   | 1   | —   | —   | 1   | —   | 3     |
| Other eye conditions.               | 10  | 1   | 4   | 3   | 8   | 6   | 10  | 5   | 4   | 2   | 2   | 2   | 57    |
| Ear, nose, throat conditions        | 4   | 8   | 14  | 14  | 4   | 9   | 6   | 11  | 12  | 20  | 25  | 19  | 146   |
| Skin conditions.                    | 31  | 35  | 70  | 32  | 31  | 21  | 8   | 29  | 17  | 23  | 24  | 58  | 379   |
| Infestations.                       | 1   | —   | —   | —   | —   | —   | —   | 20  | 1   | 1   | 3   | 14  | 40    |
| Dental conditions.                  | 3   | 4   | 3   | 3   | 7   | 6   | 1   | 1   | 1   | —   | 1   | 2   | 32    |
| Conditions of the nervous system    | —   | —   | 1   | —   | —   | 2   | —   | 1   | —   | —   | 1   | 1   | 6     |
| Arthritis & rheumatism              | —   | —   | —   | —   | 2   | 2   | —   | 3   | 1   | 6   | 3   | 4   | 21    |
| Cardiovascular conditions           | —   | —   | —   | —   | 1   | —   | —   | —   | —   | 1   | —   | —   | 2     |
| Diabetis Mellitus.                  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —     |
| All other.                          | 7   | 10  | 12  | 20  | 12  | 31  | 12  | 23  | 283 | 99  | 29  | 16  | 554   |

Source: D.N.H.&W.

## ROYAL CANADIAN MOUNTED POLICE

There is no police detachment in this settlement, and in the last three years there has been no incidence of criminal offences. The detachment at Fort Norman would be the law enforcement agency if the need arose.

## RELIGION

Prior to the building of the mission at Fort Norman the religious duties for all the settlements had been undertaken by the priests at Fort Good Hope. Until a Catholic mission was established at Fort Franklin in 1958, the priest from Fort Norman had ministered to the spiritual needs of the settlement. In 1964, the unique "Tipi" church was built at Fort Franklin by Father Fumoleau O.M.I.

Until the spring of 1967 the Roman Catholic missionary had acted as manager of the local Indian co-operative. The introduction of a manager for the co-op helped to differentiate between the two roles and created one more wage earning position in the settlement.

At present there is a missionary of the Northern Evangelical Mission also resident in the community, who has, as yet, only had time to build a house for his family.

## EDUCATION

Until the 1966-67 school year the Department operated a four classroom Federal Day School. In that year the upper portion of the school was taken over to accommodate another classroom. At Fort Franklin not all the children in Grade 7 and above go out to residential school. For the past two years the Principal has taught a class composed of grades 6, 7, and 8.

From the school attendance records given in the appendix it can be seen that the average attendance for the year is high for all but the one class in which the highest grades are taught.

School absenteeism is a short term occurrence and most reasons given for absences were for sickness and for helping at home, which was divided into such chores as getting wood or water, or baby sitting while mother went to the store.

In the summer of 1967 a three-bedroom hostel was constructed. The first to be housed were those children whose parents were absent from the community due to illness. In a community like Fort Franklin, where the women and children remain in the community during the hunting and trapping season, the building of a hostel for any other purpose than this would be difficult to justify. The hostel building was, in the first instance, delivered to the settlement in error, and rather than subject the sections to the process of trans-shipment the building was erected. Whether the children will continue to be housed in the hostel while the school is closed during the summer is not known.

Cohen has suggested that school attendance at Fort Good Hope was low due to the fact that parents did not perceive the need for formal education and they were not prepared to inflict this on their children. In regard to the high percentage of school attendance figures for Fort Franklin it might be pertinent to raise the question as to what degree is school attendance influenced by the fact that women and children are year-round residents in the community, and to what degree by their perception of the value of education? Of all the settlements, except Colville Lake, the people of Fort Franklin have had the least amount of opportunity to observe the outcome of high or low levels of education. The attendance figures of this group are similar for the two previous years, and are not an accidental occurrence.

Weir has mentioned that a particularly hard working and well liked school principal and a group of enthusiastic teachers, have had a great effect on the community by their participation in the affairs of the

settlement. Whether changes in personnel will in any way affect these figures might throw some light not only on school attendance percentages, but on the perceptions of the people in regard to the value of formal education.

## ADMINISTRATION

Until the appointment of a resident Area Administrator early in 1967 the school principal had filled the dual roles, and they achieved a degree of synonymity that has since been divided.

The role and duties for the incumbent of this position are similar to those of the area administrators of the other settlements.

## MAINTENANCE AND EQUIPMENT

The only two vehicles maintained in this settlement by the D.I.A. & N.D. are a Nodwell and a D4 tractor. The Great Bear Co-operative has purchased two second-hand dump trucks and a D4 tractor that are used for the various service contracts. The Department also has a small portable sawmill for producing a limited amount of lumber for local use.

An approximate evaluation of departmental equipment would be in the region of \$20,000, and that of the co-op at around \$5,000. However, the two trucks owned by the co-operative are so old and unreliable as to be almost useless, and the estimation of their value is biased.

A two-bay metal garage and workshop was in the process of completion for the D.I.A. & N.D., and the co-op had converted an old log shack into a repair shop and garage.

The non-Indian power plant operator was responsible for the maintenance of the D.I.A. & N.D. equipment, and could turn to the administration at Fort Norman for assistance with tools, spare parts, and the assistance of their mechanic. The driver for the co-op acted as mechanic for their vehicles, but in the event of vehicular breakdown community talents were pooled to keep equipment operating.

## DOCKS AND ROADS

Docking facilities include one wharf in front of the school and another larger one in front of the nursing station. Towards Plain Lake, which is the mouth of the Grey Goose River where it forms a lagoon or bay to the west of the settlement, the water off-shore becomes shallow, and boats with a deep draft cannot navigate. The entrance to Plain Lake is deep enough to allow canoes and shallow draft vessels to pass through. Float - equipped planes often use this entrance to Great Bear Lake after landing on the smaller lake. If planes stay on Plain Lake, passengers are transported by canoe or tractor hauled sled to the settlement. There are no facilities for wheeled aircraft at Fort Franklin. The ice in Plain Lake is generally smoother than that of Great Bear Lake during the winter and thus provides a more suitable landing area. This small lake also freezes and breaks up more quickly than the large lake with the result that the periods of accessibility are similar to those of the other settlements.

The road system in this community is poorly developed, and only a minimal amount of road construction has been done. Most vehicle and footpaths have evolved from usage rather than design. Due to the poor drainage quality of the soil the ground is almost continuously wet, and after rain, most motor vehicles have difficulty in traversing the village.

## HOUSING

The settlement tends to be divided into two residential zones. To the east of the Roman Catholic Church are the mission house, nursing station, teacherages, school, hostel and the residences of other government personnel. Indian and Metis houses, the Hudson's Bay Company Store and residence, and the Pentecostal Missionary's residence are located in the sector west of the church.



Plate 11. Child in a hammock.

The housing standards of both the white and Indian population in this settlement are similar to those found in the other communities. Apart from the nursing station, the one most recently constructed building is a two-story frame structure that is used as a teacherage. Two small frame buildings of the "512" type form the residences of the Area Administrator and another teacher, and the top floor of the school has reverted to its original function of providing accommodation for a teacher.

Indian housing is a mixture of log or frame houses. The newer ones are built of logs and have several rooms, a number of the older type have also been partitioned. Some of the houses have a storage space above the living areas and most of them have a small storage shed near the house.



Plate 12. Stringing nets.

## COMMUNITY CLUBS

Mainly through the interest and instigation of the teachers over the last 2-3 years, this settlement has had an active community club that has been able to raise money, through club activities, to obtain government assistance to build a community club.

The recreational activities that have been organized by the club have been bi-weekly movies, and occasional bingos and dances. During the winter they also held a Sports day that was well attended, and enjoyed by onlookers and participants.

## ENTREPRENEURIAL ACTIVITY

### The Hudson's Bay Company

The Company store and functions in Fort Franklin are similar to those performed in the other settlements, the only exception being that at Fort Franklin the Great Bear Co-op provides a small amount of competition for the retail trade of the settlement.

### The Great Bear Co-operative Association

This co-operative had functioned with increasing effectiveness for two to three years prior to being granted a charter in 1963. As with other co-operatives, this organization is composed of a paid-up membership with minimum entitlement of one share per member. A board of directors elected by the members is responsible for the formulation of business and management policies. The wishes of the Board are executed by the Manager of the enterprise.

The co-operative engages two of the younger women, on a full time basis, to run the store and do a certain amount of book keeping, and one man is employed on an hourly basis as a driver and handiman. Father Fulomeau O.M.I., who had been responsible for the growth of this co-operative, had filled the position of Manager.

This co-operative has the dual role of being both consumer and producer. The former consists of a retail store which serves as an outlet for a limited range of general merchandise, and the latter is concerned with the production and resale of Indian handicrafts. A wide range of handicrafts are produced by the people here, that range from dolls and beaded wearing apparel, to miniature artifacts made from bone, horn or wood.

Another function that the co-op has assumed is that of providing contractual services. Early in 1966 it obtained contracts for supplying water to the Government buildings, and for hauling away the community garbage. Contracts for road building were under negotiation.

The co-operative plays an active part in the income of a large number of families in this settlement, and is the only source of wage employment for its three employees. The value of this organization cannot be measured only in terms of tangible rewards. Considerable gains in the psychological and educational spheres are accruing to these people that would not be available without such an organization.

At present the handicraft and retail stores are housed in a samll log cabin that is inadequate for the purpose. Later in the year the handicraft store will be housed in the building that is to be erected by the Territorial Government as a residence for the manager. The retail store will remain in the log cabin.

## POPULATION

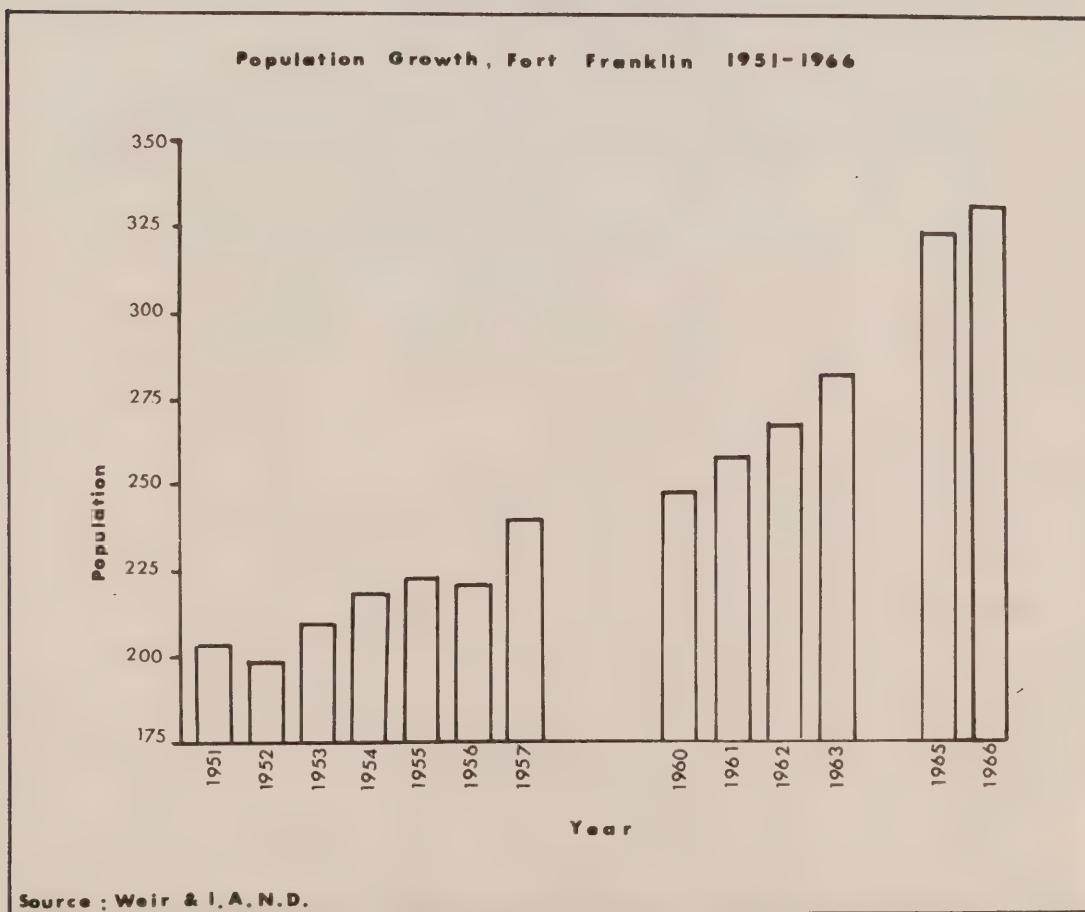
Prior to 1951 vital statistics of the Great Bear Lake people were maintained at Fort Norman, and the two groups were combined. Since that date, and the founding of a mission at the settlement on Great Bear Lake, some records have been maintained by the missionary. The table given by Weir is based on mission records.

The population above the age of 30 does not show the same constriction as those that have occurred at Fort Norman and Fort Good Hope. Perhaps the inaccessibility of this area and the remoteness of this group from other communities afforded some protection from the epidemics of the early part of this century.

The large increase of women in the 26-30 and 36-40 age groups and the present preponderance of females, might in part suggest that these people have a tendency to have a high ratio of female to male births. The imbalance in the under 15 year olds is marked. Of the births in 1966, the number of females born is nearly double that of the number of males. The age-sex structure of Fort Franklin is represented in Figure 15, and shows the large increase in the numbers of children in the group.

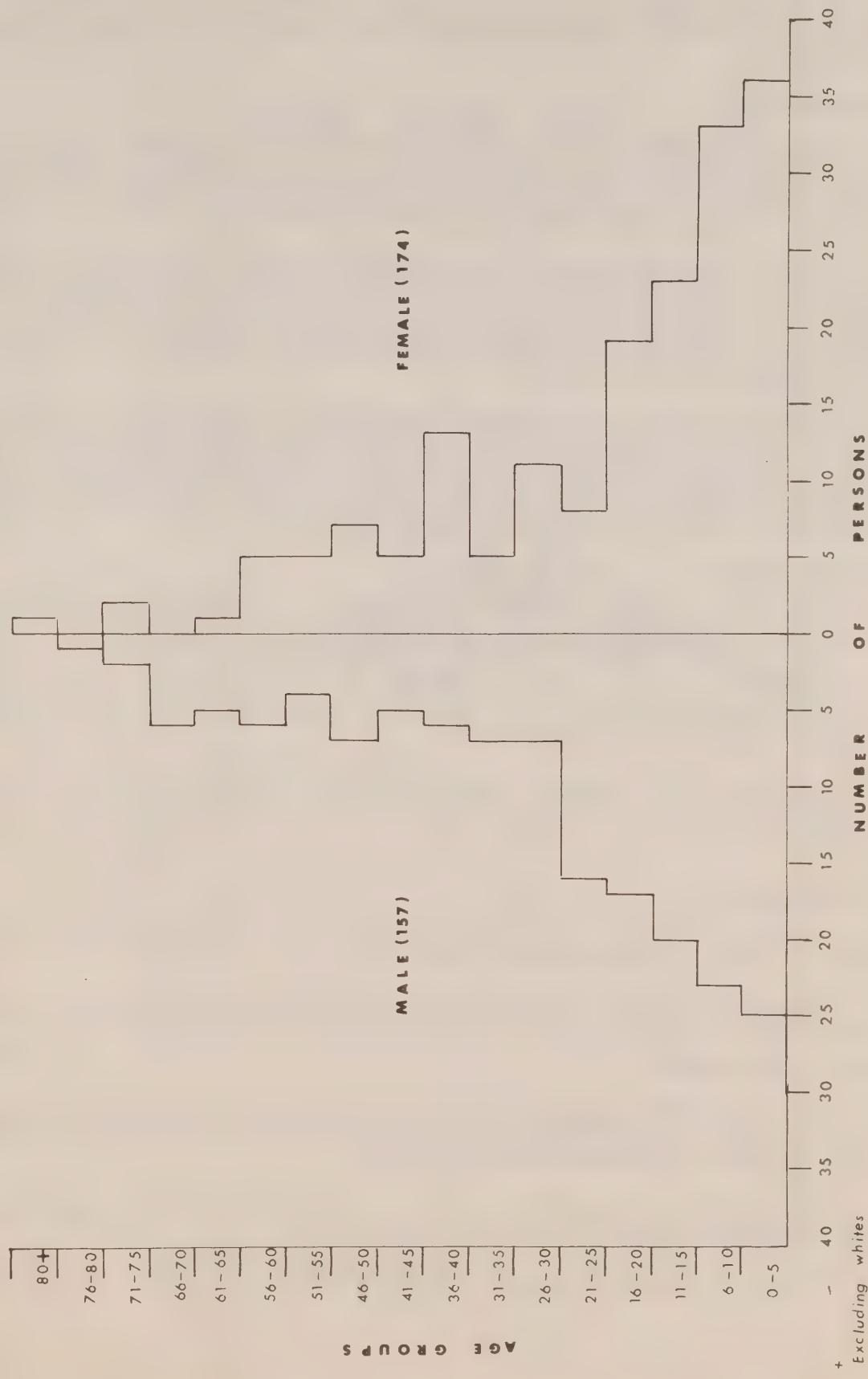
One hundred and fifty-seven individuals (47 per cent) are under 15 years of age, and 96 (or 29 per cent) of these children will be in the labour force in ten years' time. In six year's time 61 (18 per cent) will have started school, and this will require at least another two classrooms.

Figure 15



Weir has stated that for 1965 the birth rate was 45.9, death rate 9.6, and natural increase 36.6. For 1966 these figures were 36.1, 3.0, and 33.1. It would appear that in spite of a lowering of the birth rate a high rate of natural increase has been maintained. Immigration has not been a factor accounting for the increase in the population. In the last three years two families and two single adult males have immigrated to the settlement, but four families, one single male and two single females have migrated out.

The labour force (16-65 years) represents 48 per cent of the population, and as with Fort Norman, only 4 per cent are in the over 65 bracket. This community also tends towards being a young one, and if the male-female birth ratios continue in the present state of imbalance the sex structure of the labour force is going to have to be carefully reviewed in regard to economic planning.

AGE-SEX STRUCTURE - FORT FRANKLIN, 1966<sup>+</sup>

## NORMAN WELLS

As this was a company town with a certain amount of standardization in regard to housing and services that were comparable to southern standards, less time was spent on the physical and social aspects of this community.

### LOCATION & SITE

Norman Wells is located on the east bank of the Mackenzie River approximately 1100 air miles north-northwest of Edmonton. The settlement, which has an elevation 250 feet above sea level stretches along the top of a bank about thirty-five feet high, with a broad beach below. From about two miles inland, the plain rises to the Norman Range that reaches an elevation of almost 2000 feet.

Except for the low ridge on which the airstrip is located, the plain behind the settlement is a poorly drained area that parallels the river. Two small streams divide the community into sectors. One stream-bed separates the area occupied by the government buildings and residences from the rest of the settlement. The central area is occupied by I.O.L. warehouses and in the furthest, western sector, the refinery and residences of I.O.L.'s employees are located.

Permafrost has in the past caused damage to buildings, and now all buildings in the community are built either on piles or on thick gravel pads. Due to the river bank location, and the greater depth of the active layer of the permafrost, the town site is well drained, but ditches have been cut beside the roads to aid drainage during peak run-off periods. After heavy rain the ground tends to become saturated, and the roads muddy due to the silt, clay and sand content of the soil.

### TRANSPORTATION

Norman Wells has a large D.O.T., station and an all weather airport. It is a stopping point on the Edmonton - Inuvik flight of Pacific Western Airlines, and is serviced by four DC 6 flights a week.

Northward Aviation Ltd also maintain an office at the airport, and a base for their aircraft about five miles from the center of the settlement. These aircraft fly the scheduled services to the settlements in the area and are available for charter to all other points.

Norman Wells is also a trans-shipment point for freight to the other settlements in this area, and to centers along the Mackenzie River, the northern coastal settlements, and those of the Arctic Islands that are serviced by N.T.C.L.

### COMMUNICATIONS

This community is linked to all other parts of the country by the C.N. telephone network, and the D.O.T., maintain their own radio and telecommunication systems.

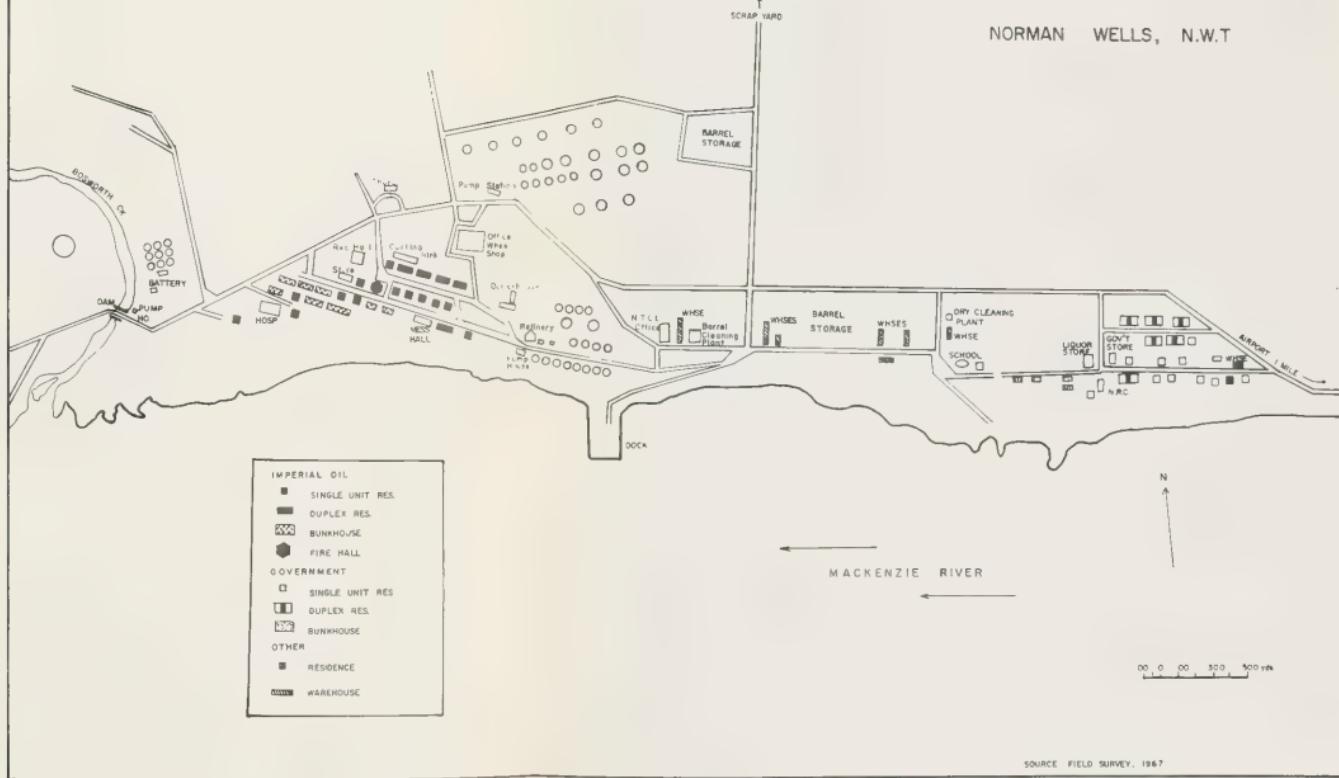
I.O.L., supplies a building to be used as a post office, and a local woman is employed as postmistress. Mail is brought in, and dispatched, four times a week on the regular flights from Edmonton.

### SERVICES AND UTILITIES

Garbage, sewage disposal, and the household water supply systems are managed by the Company. There is a bi-weekly collection of garbage, and by means of a heated utilidor system, houses are supplied with hot and cold water, and sewage is piped to a disposal area.

Electricity and heat are supplied by the company at a charge of 6c per Kwh for hydro, and \$4.50 per month per dwelling for the supply of natural gas for heating and cooking.

**NORMAN WELLS, N.W.T**





## HEALTH

The Company maintains a well equipped ten bed hospital/treatment center that is staffed by a doctor and one or two nurses. The services of the hospital are available to all the residents of the community with the Territorial Hospital Insurance paying for the treatment of non-company employees. In emergencies, the services of this hospital have been utilized by the nursing stations in the area. Patients requiring treatment beyond the scope of the services provided by this hospital are transferred to Edmonton or Yellowknife.

## ROYAL CANADIAN MOUNTED POLICE

Except for the summer, there is no resident police officer. An R.C.M.P. officer from Fort Norman spends the summer at Norman Wells, and if law enforcement services are required at other times the detachment at Fort Norman is contacted.

As a rule there is a Justice of the Peace appointed in the community who presides over a Court of Summary Conviction. All law infractions for the area are dealt with through this court.

## RELIGION

The Company provides a building for the use of all religious denominations. At present there are no missionaries residing in the community on a year-round basis. During the summer there is a Catholic priest resident in Norman Wells, and through the co-operation of St. Stephen's College at the University of Alberta, the Company brings a student Protestant minister to the settlement from May to September.

## EDUCATION

The D.I.A. & N.D., maintains a two classroom school and two teachers in the settlement for the use of all the children in the community. Education up to grade six is taught at this school. Indian, and Metis children in the higher grades go to the residential schools at Yellowknife, Inuvik or Fort Smith, and the children of non-residents have either this choice or that of sending their children out to school in the south.

## ADMINISTRATION

The administrative duties of the D.I.A. & N.D. are performed by the school principal who is also the acting Area Administrator. The duties of the incumbent are relatively circumscribed due to the smallness of the Indian population in the settlement, and to the fact that the community services and development are undertaken by I.O.L.

## MAINTENANCE AND EQUIPMENT

Most of the heavy equipment is owned by I.O.L. The D.O.T., maintain a variety of equipment for snow removal, repair of installations, and personnel transportation. These two organizations own, and maintain, most of the vehicles in the settlement.

There is a miscellany of other motor vehicles in varying states of road worthiness and mechanical reliability that are owned privately or by other organizations. An evaluation of the total number of vehicles and equipment in the settlement would be of little value for this report.

## DOCKS AND ROADS

In 1963 a new dock was built jointly by the government and I.O.L. This structure extends approximately 200 yards out into the river with an oil pipe line extending under the surface to the end of the dock to facilitate the bulk loading of oil products. The dock is large enough to provide a storage space for products to be shipped and for machines used in the loading and unloading operations.

This community has the most extensive and best maintained road system in the area. There are approximately fifteen miles of roads in and around the settlement. The upkeep of the roads is shared by I.O.L., and D.O.T. The oil company services approximately six miles of peripheral roads, and those in and around the sector of the community that it occupies. The government department looks after the airport road, and another that extends six miles east of the settlement to the float plane base and a radio tower, as well as those within its residential area in the settlement.

Due to the silt in the soil the roads tend to become muddy after a heavy rainfall, and very dusty in the summer. Oil, which is spread on the roads during the summer, helps to keep the dust down.

## HOUSING

All residents of the community are provided with accommodation by their employers. The Metis and Indians who are unemployed have to provide their own dwellings.

The housing provided by employers are frame type buildings comparable to those of middle income families in southern Canada. Those Indian and Metis not employed by an outside agency live, for the most part, in small one or two room shacks constructed of scrap material. These dwellings are smaller and in a worse state of repair than those at any of the other settlements in this area.

The accommodation provided by I.O.L. for employees ranges from duplex or single unit housing for married persons to dormitory accommodation for single people. All accommodation is furnished and supplied with free utilities, and in addition, married employees are given an \$80.00 monthly living allowance.

Department of Transport Personnel are also provided with accommodation but married persons must pay rent, and single employees pay room and board.

The two air line companies, N.T.C.L., and C.N.T., maintain dwellings for their employees. These range from frame type housing, to pre-fabricated houses, and two fully serviced house trailers.

## OTHER COMPANY SERVICES

In addition to the utilities and services already mentioned I.O.L. maintains a fire alarm and control system with call posts at strategic points throughout the settlement.

The Company also provides recreational facilities which include a large recreational hall, a two sheet curling rink and a ball field. The club facilities are operated by the Norman Wells Recreational Club and in membership is made up of all the residents of the community.

A variety of recreational activities are provided by the club which include dances, bingo games, card parties and bi-weekly movies free of charge. The recreation hall houses a coffee bar, badminton court, table tennis equipment, a shuffle board, a juke box and a small library and forms the center of social life of the community.

Both I.O.L. and D.O.T. maintain private grocery stores for their employees only. Groceries are supplied at prices similar to those that would be paid in Edmonton. Those persons not employed by either of these agencies must either order their year's supply of food from the south and have it shipped in by barge, or obtain it from the nearest Hudson's Bay Company store which is located at Fort Norman.

## OTHER GOVERNMENT SERVICES

As the oil products shipped from Norman Wells make up approximately one third of all freight hauled by the Northern Transportation Co., Ltd. this company operates a local shipping office in Norman

Wells during the summer. It also maintains two prefabricated residences and a warehouse. In addition to the four regular summer employees the company employs a number of local men on a casual labour basis.

Since 1960, the Territorial Government has maintained a liquor store in this settlement. Liquor supplies are shipped in by barge during the summer, and this store services the surrounding communities. It is staffed by one permanent and one part-time employee.

### ENTERPRENEURIAL ACTIVITY

Apart from I.O.L., the commercial enterprises in this community are Pacific Western Airlines, Northward Aviation and the Mackenzie Mountain Lodge.

Pacific Western Airlines has a ticket and freight office at the airport that is operated by two persons. This company also operated a small aircraft for charter service that has since been taken over by Northward Aviation.

The scheduled air services to the surrounding settlements are supplied by Northward Aviation Ltd. This company maintains a ticket and freight office at the airport and a small base for its planes on D.O.T. Lake six miles east of the settlement. It also maintains two houses in the settlement for full-time employees.

Both companies employ men on a casual basis. The peak period for casual employment with these companies is during the summer when the volume of traffic and freight from the south increases appreciably.

The Mackenzie Mountain Lodge consists of three house trailers joined together and is operated by a husband and wife team for a Calgary company. The bulk of the lodge's guests are travellers en route to, or from, the settlements or the hunting lodges in the Mackenzie Mountains.

### POPULATION

Here again, as the population is small, statistical analyses are of little value, and the fact that it is also a very transient one limits the extent to which it can be discussed.

Most members of the community have either been transferred there for a specific period of time or have been hired on a short term basis, and on completion of the job, or the span of duty, they tend to leave the community if no other work is available. The seasonality of employment and the type of jobs available tend to create a large floating population of single men during the summer. During the winter the population becomes reduced to care-taking and service crews and their families. With the building of the D.O.T. installations and the all weather airport, an increasing number of permanent positions have been created, and a broader base laid for the viability of the settlement. But as all these positions are filled by an essentially transient population from the south a diagrammatic representation of the population would be of little value.

The Indian and Metis population of Norman Wells also shows a high degree of seasonal fluctuation. One family group comes from Fort Franklin and another from Fort Norman regularly every spring to take up seasonal employment with I.O.L. Numerous young men from various settlements in the Mackenzie District are either transients staying only for short periods hoping to find employment, or those who have been able to obtain casual or seasonal labouring jobs.

As stated previously, in 1966, the more permanent indigenous population\* was composed of eleven households representing twelve adult males, eleven adult females and 43 children below the age of 16. With the exception of one male and one female all the adults were between the ages of 16 and 65 years. Half of

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\*With the exception of the Eskimo household these people have lived here for over three consecutive years.

the men and all of the women were between the ages of 16 and 35 years. Eight of the households were Metis, two were Indian and one was an Eskimo family.

Of the permanently employed individuals there were five Metis men and two women, both the Indian men and one woman, and both the adults of the Eskimo household. Two Metis men and one woman obtained seasonal employment and there was one Metis couple who were both old age pensioners.

## Chapter 5

### THE ECONOMY

#### INTRODUCTION

The specimen period that has been used for the treatment of the economies of the settlements has been the twelve-month period that falls between January 1st and December 31, 1966. This period does not coincide with the fiscal year of any of the government or private institutions in the area, but it was felt that it would afford the nearest span of time for which the most complete records were available.

The figures that appear for family and community incomes cannot be deemed complete as in some cases earnings have had to be estimated on the basis of employers' data. They do however constitute the best available compilations for the period under discussion, and do endeavour to reveal the present level and composition of the economy.

This section of the report will be treated in four parts.

**Part 1** – This will briefly outline the tribes in the area the pre-contact subsistence economy.

**Part 2** – Will consist of a brief description of the evolution of a hunting, fishing, trapping economy into one that is becoming increasingly dependent on a monetary exchange system.

**Part 3** – Will discuss the components of the present subsistence economy.

**Part 4** – In this section the economy of each settlement will be discussed. It must be mentioned here that as the population of Norman Wells was found to be such a highly transient one, it was not possible to make a detailed study of individual earnings in the time allotted for field work. The study of the economy of this settlement was confined to the earnings of the Indians and Metis who had been resident of the community for the whole of 1966.

White residents have been excluded from the discussions on the economies of the settlements. As salaried employees their incomes are external to the economic processes of the community, and in turn they contribute relatively little to the total economy of the settlement. The term 'income' used in the text refers only to Indian and Metis incomes.

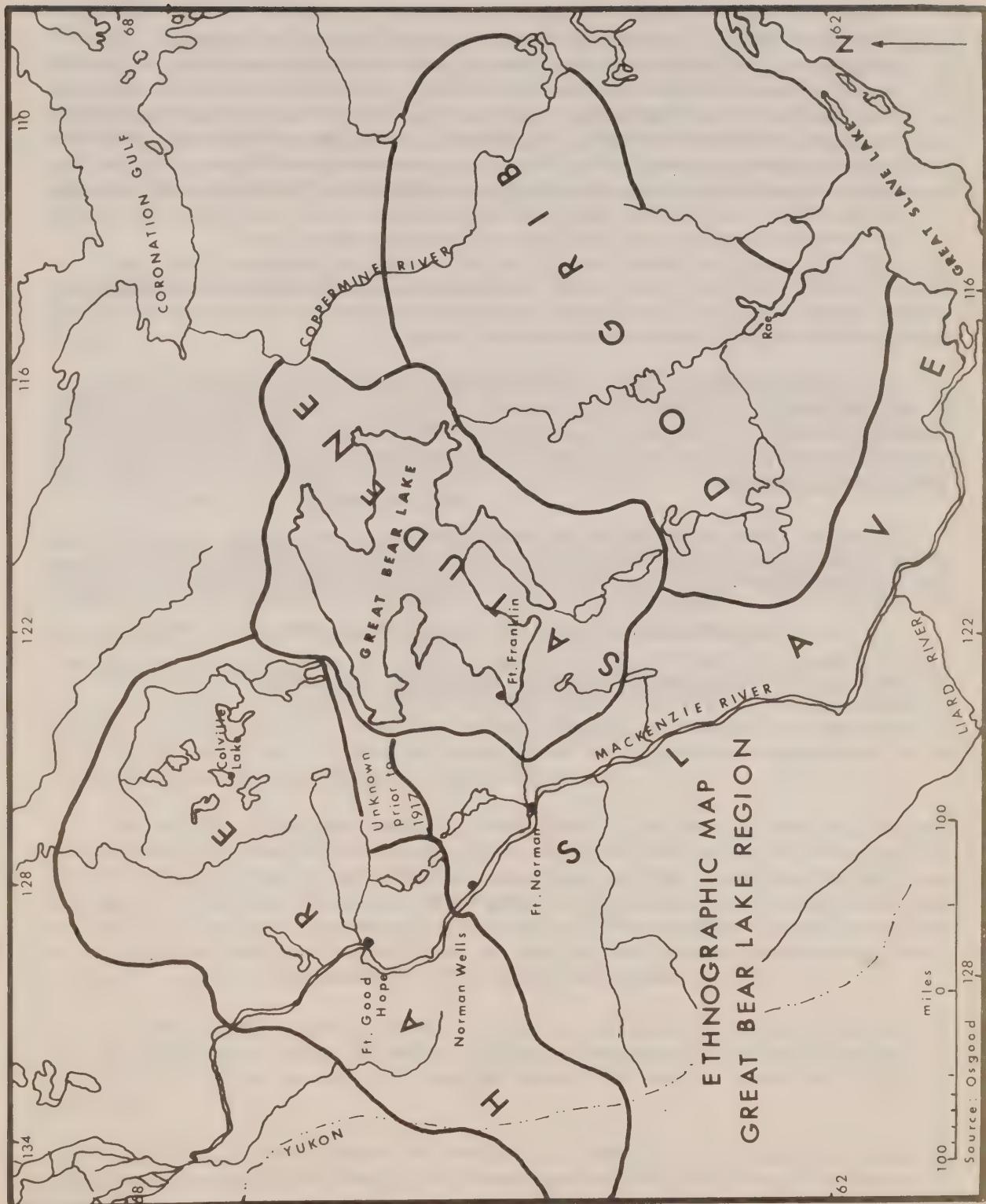
#### Part 1

#### PRE-CONTACT PERIOD

The literature on the indigenous people differs as to whether they should be considered as tribes or not. But the people of the four settlements do fulfill the minimal requirements defined by MacNeish as determining a tribal group.\* Hurlbert defines the Hare Indians as constituting a tribal group and categorizes the bands of this group according to their self-defined groupings.

\*"A set of people living together in physical contiguity (but not necessarily, together), speaking a mutually intelligible language, sharing a common culture and having at least a vague sense of common identify". (MacNeish. 1956)

Figure 18



Weir summarizes the literature on the people of this area when he states:

"These woodland people of the Mackenzie River system had a simple hunting, fishing and gathering culture. Each band was a loosely consolidated unit and occupied a distinct area. Only a small part of this area was utilized at any particular time. Their economy was based on caribou, both 'woodland' and 'barren ground', moose, small game, birds, fish and berries. Although most groups preferred meat they relied heavily on the fish resources of the area. The seasonal variety and regional location of the food supply kept the Indian bands in constant motion. This need for mobility kept the material culture to a minimum. Their dwellings were rectangular huts of poles and brush with gabled roofs in winter and conical tipis covered with caribou hide or spruce bark or simple lean-to's in summer. Every family possessed a canoe, nearly always made of spruce bark, because birch bark of sufficient size was seldom available. The 'Mountain Indians', i.e. those Indians who lived in the Mackenzie Mountains to the west of Fort Norman, covered their boats with moose hide instead of bark".

In winter, canoes were replaced by snow shoes. The earliest forms of transportation were human packing. Women and girls carried the heaviest loads as men needed the freedom to hunt while on the trail. The aboriginal Indians had dogs but these were used primarily for hunting.

Jenness estimated the pre-contact populations of these groups in excess of what they are today. If he is correct the present smaller populations may be a result of the diseases brought by the Euro-Canadians, to which they had little or no resistance, or to the fact that critical densities of the areas had been exceeded, or a combination of both. Inter-tribal hostilities and infanticide have also occurred among these peoples and affected population growth.

Osgood and Jenness have stated that the original population of the Great Lake - Mackenzie Valley belong to the Athabasca linguistic group. Both have shown that tribal groupings existed in this area, and Osgood has territorially mapped a group he called the "Satudene" as occupying the Great Bear Lake region.

This group is situated between the Hares to the North in the vicinity of Fort Good Hope and Colville Lake, The Dogrib to the south in the area around Rae, and the Slave along the Mackenzie River to the west. (For a discussion of the languages and dialects of the area see Osgood and Hurlbert).

## Part 2

### ECONOMIC DEVELOPMENT

For the purposes of this report, the economic development of the area is divided into three phases. The first occurred when the search for new fur trading territory brought the trader-explorer who was quickly followed by the resident trader, and then by the missionary. This phase was followed by a burst of entrepreneurial activity in the form of prospectors, trappers and traders. It was a period during which other forms of transportation developed, and the exploitation of non-renewable resources commenced. The final, most recent phase has been the increasing availability of money from wage earnings and government allowances, and an increasing number of Euro-Canadians representing both the government and private sectors.

These periods are arbitrary divisions of a time span of several hundred years, and considerable overlap has existed in the transition from one period to another.

#### Phase 1

The basic economic processes of the native economy were those of a reciprocal exchange of goods or services. The early explorers to the area used the same system of exchange with the native population, but brought about changes in the social processes by introducing items of exchange that enhanced the social status of individuals or increased their productivity. Due to the itinerant nature of these expeditions, the early intrusions of the white man into these regions had little or no effect on the seasonal cycle of activities of native groups with whom they came in contact.

Prior to the establishment of trading posts the seasonal activity and regional location of the food supply had kept the Indians in a state of almost constant migration. The need for mobility had kept their material culture at a minimum and the ability to interact with other groups for a prolonged period of time was confined to the summer months, in areas where there were good fishing grounds.

When establishing trading posts sites had been selected firstly because the location would open the way to new regions and secondly because the immediate vicinity provided good resource possibilities in hunting, fishing and trapping. The sites most suited to the founding of a trading post were those where the Indians tended to congregate in the summer, as these afforded the opportunities to trade, and also met the requirements of being a dependable food resource area for the trader.

The founding of trading posts changed the Indians pattern of activities to the extent that it affected their technology and motivation towards their pattern of activities. The steel trap and rifle replaced the bow and arrow, sling shots, and native methods of game entrapment. They became more effective hunters and trappers. The ability to trade surplus furs and game for a wider range of goods than had hitherto been available, altered their motivation in regard to these activities. The attainability of food of less spoilage value through the means of exchange, reduced the need for almost constant migration and created a tendency to congregate in the neighbourhood of the trading posts for longer periods.

The newly established trading post consisted of little more than a log cabin in which lived the trader (and his assistants, if any). With the coming of spring and the return of the Indians, the trading post underwent a change that was accentuated during the summer by the arrival and departure of the trader's river craft.

The founding of missions altered the structure of the settlements by increasing the number of buildings and extending the range and type of culture contact available to the Indians. The vast area to be covered by the local missionary, his desire to cater to as large congregations as possible, and the sacred

seasonal Christian festivals were factors militating towards encouraging the Indians to return to the settlements at other seasons and for purposes other than trade. They were encouraged to build cabins that could be used as more comfortable shelter at other seasons. The ability to combine trading with religious festivities and the procurability of food as an item of trade gradually developed yet another pattern of cyclical activity.

### Phase 2

The second phase of economic development began during the last few decades of the nineteenth century with the exploration of the Mackenzie District by scientists of various disciplines. By the turn of the century the Mackenzie District was no longer an unknown territory.

Developments occurring in the technology of southern Canada were to be reflected in the Mackenzie District, first in the form of changes in the modes of transportation that made the area more easily accessible, and later in the techniques of the extractive industries which enabled mining operations to develop, and larger centers to form.

During the period of the Klondike gold rush numerous prospectors and entrepreneurs passed through this territory. Some remained to trade and trap filtering further north in the process, while others left the territory. The increase in the white population brought about demands for goods and services comparable to those in southern Canada, and to the establishment of some form of supervision and government.

When in 1905 The Royal Northwest Mounted Police were made responsible for the administration of law and order in the District of Mackenzie, a system of police posts and patrols was initiated throughout the area. A wide range of administrative duties were also undertaken by the police that included the distribution of relief, welfare and medical care, registration of vital statistics, and the enforcement of game laws.

With the establishment of schools and hospitals in the larger centers there followed an increase in the construction of more permanent native houses. Housing and trade affected the period of residence in the communities by the Indians, and helped to establish the pattern of returning to the settlement to celebrate religious holy-days.

The development of trading stimulated the acquisition of goods that were in turn subjected to the traditional patterns of sharing. These patterns are still very much in evidence today, and money appears to be the only item that is exempt.

One of the earliest introductions to a monetary system in isolated posts had been through the provision by traders of their own tokens of exchange. But as most trade was carried out on a ledger accounting system there was a negligible amount of tokens or coins in circulation.

### Phase 3

The third stage of economic development began during the first two decades of the twentieth century which was a period of increasing northward migration by Euro-Canadian entrepreneurs. This was precipitated by high fur prices, and the activities of mining and oil companies. The economic basis for a number of communities in the Mackenzie District moved away from a reliance on the renewable resources, and became based on the extractive industries. In others the entrepreneurs established themselves as traders and trappers, often both, and competed with the Hudson's Bay Company for the fur trade of the region. In the ensuing struggle for local markets some settlements had as many as three trading posts in the 1930's, but few of the free traders were able to survive the increasing competition.

Social legislation being passed in Canada, and the active interest of both the Territorial and Federal Governments in providing services and employment in these northern communities have induced other changes in the economics of these settlements. As Weir states, the characteristics of the settlement might be comprehensible in terms of its importance to the fur trade, mining, industry, the government administration or the transport industry, or to any combination of these. Today, another aspect of a community might simply be that the settlement has developed for a variety of reasons, and as such persists without a sufficient economic basis on which to survive.

## SUMMARY

With the exception of Norman Wells, the economy of the settlements has been essentially a hunting-fishing-trapping subsistence economy that has become increasingly inter-woven with a monetary system.

From a stage of almost complete self-sufficiency, where whatever trade existed was carried on in various forms of exchange, the economies have moved through a phase of trapping to trade to supplement or implement requirements. With an increasing availability of money from wage labour and from government allowances, they are again in a state of transition in which it is difficult to ascertain the extent to which the products of the aboriginal economy supplement the cash income or vice versa. At present it is possible to define the subsistence economy as one that is composed of hunting, fishing, trapping and money.

The increase in the availability of money is, in this area, a fairly recent development. But the low level of cash income from all sources is still insufficient to allow for the accumulation of savings to be used for investment purposes. The unavailability of local capital is one of the main factors affecting the development of industries in the area. Southern based capital has in all instances provided the impetus for the development of whatever industries exist.

## Part 3

### COMPONENTS OF THE SUBSISTENCE ECONOMY.

For the purposes of discussion the components of the subsistence economy has been divided into three parts — that of earned, unearned, and real income. The calculation of the last of these has been on the basis of game taken. Government assistance with equipment, housing, community hunts and other services have had to be excluded due to the difficulties involved in assigning values to these.

Household income refers to the gross cash income of the adults resident under one roof. Discussions in terms of household income have been preferred to that of per capita income as there are a number of young people of labour force age who are at residential school for nine months of the year. The sharing patterns of these groups has also necessitated the use of household groups as the focus of discussions so as to include those members of the household who contribute only through service or through the provision of game.

As the Indians and Metis have been defined as the permanent population and the whites as a transient group, the latter have not been included in the populations. They have also been excluded from discussions of the labour force and those relating to income. Unless otherwise stated, the Indians and Metis have been grouped together for discussion purpose.

## **EARNED INCOME**

### **Wage Employment**

In the past trapping has been almost the only source of cash income for the Indians and Metis. The two main sources of earned income are now wage employment and trapping. Cash earnings have gradually accelerated in the last decade as employment opportunities have been created through the introduction of an increasing number of government service agencies with establishment positions for the employment of local labour. Government sponsored work projects, and entrepreneurial activities have also increased the availability of wage employment. However, much of this is basically seasonal. Except for Government winter works projects and permanent jobs the bulk of wage work occurs in summer and early fall. This fits well with the trapping cycle as it is during the summer that people in the settlements are available for work.

It must be mentioned that the level of wage earnings fluctuates from year to year depending on the amount of transient entrepreneurial activity that occurs in the area in the form of oil or mining exploration, survey crews and so on. As most of the demands for casual labour are for Federal or Territorial Government community development projects, some fluctuation in the amount of earnings also occurs as a result of administrative decisions and fiscal policies. The figures given in this report are applicable to this one year only and are no indication of future expenditures on the part of either the private or government sectors.

### **Trapping**

A statement on trapping done in this area has been given earlier in this report. The relative importance of trapping to other sources of income will be discussed when dealing with the gross income structure of each settlement.

Traditionally, trapping was the only source of money. But changes have occurred over the years that have affected both the extent to which trapping can be indulged in as an economic activity, and in the perceptions of the Indians and Metis in regard to trapping as a reliable source of income. Some of these factors have already been mentioned, one that has not, is the extent to which permanent employment affects an individual's trapping activities.

The subject has been discussed by a number of authors, and it remains only to summarise their conclusions that permanent employment considerably reduces the ability of an individual to trap intensively, or to go any great distance from the settlement to set or tend traps.

It would seem to be a justifiable supposition that the people most likely to obtain, and continue in, a permanent job would be the people with the energy, enterprise and physical ability to be active trappers. The decreasing amount of trapping in an area might result from an increase in the amount of permanent positions that become available.

As it is not the purpose of this report to discuss the changes in trapping activities per se, the subject is only treated in so far as it is relevant to the economy as a whole.

## **UNEARNED INCOME**

In addition to the social legislation programs of family allowances, old age pension and disability allowances, the residents of this area benefit from Federal and Territorial Welfare Programs. Of all the forms and sources of income, Government allowances are the most reliable, and as Vanstone point out, it seems likely that the reliability of the small monthly cash income has had some effect on reducing a reliance on less stable forms of income and, inducing a dependency on the regularity of this money.

In addition to the above allowances, and under the agreement of Treaty No. 11, the Indians of this area receive five dollars each a year. The band chief receives \$25.00 and the councillors \$15.00 each per annum.

## REAL INCOME

Another source of income that is not generally available to the wage earner in the south is hunting. In varying degrees, game animals supply the local people with food, clothing and cash.

Usher has discussed the problem at some length and shown that by assigning minimum monetary values to game and country foods it is possible to arrive at a more inclusive picture of the economy than is otherwise obtained.

For the purpose of discussion minimum dollar values have been assigned to food sources. These values have been based on discussions with Dr. N. Novakowski of the Canadian Wildlife Service and on rates and values assigned to these items in the "Northwest Territories Today".

TABLE 33 DOLLAR VALUE OF GAME TAKEN

| Source                     | Average Weight | Price per Lb. | Value of Hide \$ | Total price per animal \$ |
|----------------------------|----------------|---------------|------------------|---------------------------|
| Caribou                    | 100 lbs.       | .30           | 5.00             | 35.00                     |
| Moose                      | 350            | .30           | 5.00             | 110.00                    |
| Dall Sheep                 | 150            | .30           | —                | 45.00                     |
| Black Bear                 | 250            | .30           | 5-10             | 80.00                     |
| Ducks, Geese and Ptarmigan |                |               |                  | .10 each                  |

No estimate has been attempted for fish taken as it was not possible to obtain any consensus from informants on averages of numbers of fish caught. The changing pattern in regard to fishing also made it difficult to determine its extent. At Fort Good Hope and Fort Norman particularly, there appeared to be a reliance on obtaining fish on a sharing or purchase basis, rather than a tendency for each household to be self-sufficient in regard to fishing. At Fort Franklin fish is bought and sold by the Co-op for 10 cents a pound, and it is done so with the knowledge that what fish has been bought will eventually be resold locally.

Government-sponsored community hunting expeditions were undertaken in Fort Franklin, Norman and Good Hope which yielded returns of 100, 85, 98 carcasses respectively. The carcasses were stored in the local freezing units (known as reefers) and dispensed at regular intervals to heads of Indian households by the Chief or his representative. The value of this meat has not been included in the figures showing real income, as it is available only to the Registered Indians.

## Part 4

### THE ECONOMIES OF THE SETTLEMENTS

#### Capital Investment

In some of the settlements capital investments have varied considerably over the years, and as in some instances it was not possible to obtain even skeletal data on which to base estimates, the question of appraisals of the levels of capital investments has not been dealt with.

It was also felt that with the wide range in age of buildings and equipment that estimates based on replacement costs would be of little value where replacements, if any, occurred in a form in which the functions of the original were incorporated in a number of others.

In all of the settlements, both the government and private sectors have provided capital investments, but the extent of these varies considerably between the communities. At Norman Wells and Colville Lake the private sector has provided the major emphasis in capital investment, whereas at the other settlements various Government Departments have been the major sources.

Norman Wells developed as a company town, and until the building of the air port and dock, government investment in the community was minimal. At Colville Lake, until the building of the small R.C.M.P. plywood cabin in 1965, government investment had been limited to the provision of housing for the Indians. At the other settlements, except for the buildings of the contractors and traders, federal agencies have provided not only the initial investments but the continuing costs for the operation and maintenance of a variety of services.

Capital investments and replacement costs for the average trapper have been dealt with earlier. As it was not possible to obtain an equipment and replacement inventory for each individual in this area in the time allotted for field work, details of these have been excluded for all of the settlements. It would have also been beyond the scope of the survey to calculate, on an individual basis, the value of equipment that had been shared, given, or made.

### SOURCES OF INCOME

The four main sources of income in this area are wages, trapping, welfare and social legislation. A fifth and less important source is that of income derived from the sale of handicrafts. A graphic representation of the relationship of these sources to the total economy is given in the appendix.

### COLVILLE LAKE

#### LABOUR FORCE & WAGE EMPLOYMENT

In the summer of 1966, of the total population of 75 persons, 50, or 66 percent of the population were in the labour force. This number is well in excess of wage labour opportunities in or near the settlement. The two permanent jobs available in the community were for a clerk for the free trader, and a janitor-handiman to the missionary. Both these positions were filled by Metis, one of whom was the son of the trader.

The only opportunities for casual labour were those of hauling logs and building log cabins for both the missionary and the trader. This provided some wage labour for six men.

As stated earlier, some out-migration occurs during the summer, but the number of males seeking summer employment elsewhere fluctuates from year to year. This summer migration appears to be more in the nature of visiting than for the purpose of seeking employment.

Tables 36 & 37 show the higher dependence on wage labour of the Metis, and indicate that for the whole group, wage represents only 21 per cent of the cash income.

TABLE 36 -INDIAN CASH INCOME- COLVILLE LAKE 1966

| Source                  |  | Value       | Per cent of total<br>of Income for Indians |
|-------------------------|--|-------------|--|
| <b>Earned</b>           | Wage Employment                          | \$2,452.00  | 10   |
|                         | Trapping                                 | \$13,692.00 | 52   |
|                         | SUBTOTAL                                 | \$16,144.00 | (62%)                                      |
| <b>Unearned</b>         | Family Allowance<br>and Treaty Payments  | \$1,364.00  | 5  |
|                         | O.A.P., O.A.S., and<br>Disability Allce. | \$7,128.00  | 27   |
|                         | Social Assistance                        | \$1,583.00  | 6  |
|                         | Unemployment Ins.                        | —           | —  |
| <b>TOTAL<br/>INCOME</b> | SUBTOTAL                                 | \$10,075.00 | (38%)                                      |
|                         |  | \$26,219.00 | 100%                                       |

TABLE 37 -METIS CASH INCOME- COLVILLE LAKE 1966

| Source                  |  | Value      | Per cent of Total<br>of Income for Metis |
|-------------------------|--|------------|--|
| <b>Earned</b>           | Wage Employment                          | \$4,500.00 | 69                                       |
|                         | Trapping                                 | \$1,529.00 | 24                                       |
|                         | SUBTOTAL                                 | \$6,029.00 | (93%)                                    |
| <b>Unearned</b>         | Family Allowance<br>and Treaty Payments  | \$450.00   | 7  |
|                         | O.A.P., O.A.S., and<br>Disability Allce. | —          | —  |
|                         | Social Assistance                        | —          | —  |
|                         | Unemployment                             | —          | —  |
| <b>TOTAL<br/>INCOME</b> | SUBTOTAL                                 | \$450.00   | (7%)                                     |
|                         |  | \$6,479.00 | 100%                                     |

### Trapping

It would appear from tables 36-39 that the major economic activity and source of cash income for all the Indians, and at least one of the Metis, was trapping. Of the 25 hunting and trapping licences issued to males in this settlement 23 were used, one was not returned, and only one returned indicating no game or fur take.

TABLE 38. INDIAN AND METIS CASH INCOME AS A PERCENTAGE PROPORTION OF THE TOTAL CASH INCOME OF BOTH

|            | Wage Employment | Trapping | Unearned Income |
|------------|-----------------|----------|-----------------|
| Indians    | 7               | 42       | 31              |
| Metis      | 14              | 5        | 1               |
| Total 100% | 21              | 47       | 32              |

TABLE 39. THE ABOVE AS A PERCENTAGE OF THE TOTAL OF EACH TYPE OF INCOME

|         | Wage Employment | Trapping | Unearned Income |
|---------|-----------------|----------|-----------------|
| Indians | 33              | 90       | 96              |
| Metis   | 67              | 10       | 4               |
| Total   | 100%            | 100%     | 100%            |

The figures in table 40 given below showing licences issued and the number of times fur was traded, were taken from Game Branch records and the Fur Traders Monthly Return submitted to them.

TABLE 40. OCCASIONS FUR SOLD TO LOCAL TRADER 1966.

| NOVEMBER                          |  |                                   |  | DECEMBER |    |   |   |
|-----------------------------------|--|-----------------------------------|--|----------|----|---|---|
| Number of Individuals Trading Fur | Number of times an individual traded fur | Number of Individuals Trading Fur | Number of times an individual traded fur | 1        | 2  | 3 | 4 |
| 19                                | 19                                       | —                                 | —  | 23       | 23 | — | — |

It would appear from tables 38 & 39 that trapping forms the basis of the cash income of these people, yet with 30 males in the labour force only 25 hunting and trapping licences were issued, and of these only 76 per cent actually took advantage of the first month of the trapping season. As all trappers return to the settlement during the second or third week of December, the number of individuals trading fur in December can be considered to be the total of the actual number of active trappers for at least the first half of the trapping season.

The above table seems to indicate that while these people return to the settlement at the same periods as the trappers of the other settlements do, they appear either to return less frequently once they have set up their winter camps, or to sell fur less frequently than do the trappers of the other settlements.

The fact that of all the settlements these people have the smallest number of trappers and the highest dollar value sales of fur, might suggest that they trap a highly productive fur bearing area, and perhaps spend most time trapping.

### UNEARNED INCOME

In this settlement there were 6 individuals (or 5 households) receiving Old Age Pensions or Old Age Security, the five households were also in receipt of welfare assistance. Seven of the seventeen households in this settlement were in receipt of varying amounts of family allowance, and during the year 1966, two households, other than those of the elderly mentioned above, also received welfare assistance.

For the year, the total from all sources of unearned income amounted to \$10,525.00 or 32 per cent of the total money income of the group.

With the absence of an area administrator there is little access to other sources of income, and the irregularity of the arrival of mail does not allow a dependency on regular government allowances to develop.

TABLE 41.

### COLVILLE LAKE

#### COMPOSITION & GROSS CASH INCOME OF HOUSEHOLDS – 1966.

| Composition of Households |          | Gross Income per Household |         |           |           |           |           |       |
|---------------------------|----------|----------------------------|---------|-----------|-----------|-----------|-----------|-------|
| Adults                    | Children | Under 500                  | 500-999 | 1000-1999 | 2000-2999 | 3000-3999 | 4000-4999 | 5000+ |
| 2                         | —        | 1                          | 2       | 1         | —         | —         | —         | —     |
| 3                         | —        | 1                          | —       | 1         | —         | —         | —         | —     |
| 4                         | —        | —                          | —       | —         | 2         | —         | —         | —     |
| 2                         | 1        | —                          | 1       | —         | —         | —         | —         | —     |
| 2                         | 2        | —                          | —       | 1         | —         | —         | —         | —     |
| 2                         | 4        | —                          | —       | 1         | —         | —         | —         | —     |
| 2                         | 5        | —                          | —       | —         | —         | 1         | —         | —     |
| 2                         | 6        | —                          | —       | —         | 1         | —         | —         | —     |
| 3                         | 3        | —                          | —       | —         | —         | —         | —         | 1     |
| 4                         | 6        | —                          | —       | —         | 1         | —         | —         | —     |
| 5                         | 1        | —                          | —       | —         | 1         | —         | —         | —     |
| 6                         | 2        | —                          | —       | —         | —         | —         | 1         | —     |
| Total – 17 Households     |          | 2                          | 3       | 4         | 5         | 1         | 1         | 1     |

## COMMUNITY GROSS INCOME

The figures in the previous tables reflect a high dependency on trapping and unearned income as a source of money for the Indians, with wage employment and trapping being the major sources for the Metis.

The following table gives the distribution of households by the composition of a household and its gross cash income. The average gross cash income per household is \$1923.00. This appears to be affected by the number of adults in the group.

As stated earlier individual and family gross incomes were avoided in preference for those of a household. This was decided upon for two reasons. The first of these was that patterns of sharing are still an important part in the interaction patterns of these settlements, and the other was that household groupings might give a more meaningful indication of income patterns.

## REAL INCOME

The imputed monetary value of the game take amounts to \$16,163.00 and accounts for 34 per cent of the real income of the whole group. Of this, 28 per cent was taken by the Indians and 6 per cent by the Metis.

The availability and high usage of country food is reflected by these figures, and the fact that permanent employment affects either the need or the ability of the Metis to hunt as extensively.

A certain amount of wastage occurs in the utilization of hides. These people, like those of the other settlements, wear store bought clothing and only tan and use hides for footwear, dog whips or dog harnesses. Some hides may be used for bedding during the winter and then discarded. None appear to have been used for this purpose during the period of field work, and no hides in any quantity were observed around the settlement. Nor did these people produce local leather handicrafts for resale.

The high usage of country food provides some saving of cash expenditures in that it is also used for dog food. No dog food is imported into this community.

## SUMMARY

Colville Lake is characterised by extended family and composite households. The income levels of the Indian and Metis groups are low in comparison to southern standards but not necessarily so when compared to those of other settlements.

With the limited amount of wage labour available in the community, trapping and government allowances are the only other sources of money. Wage earnings and unearned income provide 53 per cent of the income of the community, and the balance is derived from trapping.

The dollar value of game adds one-third to the money income of this group, and the combination of game take and fur sales indicates that these people are predominantly hunters and trappers.

Once these people have set up winter camps they appear to return to the settlement less frequently to trade fur. In the absence of a local school these people are free of the problems arising from the necessity of children's school attendance. It might be suggested that when this is combined with the absence of medical, entertainment and administrative facilities and a regular mail service these people have less reason to return to the settlement at frequent intervals.

### FORT GOOD HOPE

#### LABOUR FORCE & WAGE EMPLOYMENT

The number of Indians and Metis in the labour force (16-65 years) in the summer of 1966 was 81 men and 72 women who represented 51 per cent of the total population. These figures were well in excess of the number of opportunities for wage employment in, or near, the community.

Inspite of increased local demands for casual labour during the summer these jobs are not numerous enough to absorb all of the employable adults, and a small number of men in the 20-35 age group try to find employment at the larger centers of Inuvik, Yellowknife and Fort Smith.

Numerous people in this age group stated that they had spent at least one summer in one or more of the larger settlements, but had to return because of unemployment and a consequent inability to support themselves or to contribute to the upkeep of the host household.

The young adults who have recently left school appear to be particularly motivated to find employment elsewhere. If they have not been out of residential school for any length of time they are much more able to do so, having made friends in their school locale, learnt the processes of obtaining employment, and possibly having applied and been interviewed for positions.

#### PERMANENT EMPLOYMENT

The following table gives the number of permanent jobs available in the settlement.

### FORT GOOD HOPE

**TABLE 42. OCCUPATIONS and PERMANENT EMPLOYMENT BY ETHNIC GROUP and SEX. 1966**

| OCCUPATION              | WHITE    |          | OCCUPATION                        | INDIAN & METIS |          |
|-------------------------|----------|----------|-----------------------------------|----------------|----------|
|                         | Male     | Female   |                                   | Male           | Female   |
| Area Administrator      | 1        | —        | School Janitor                    | 1              | —        |
| R.C.M.P. Officer        | 1        | —        | Cook for School                   | —              | 1        |
| Missionaries            | 1        | —        | RCMP Special Constable            | 1              | —        |
| Teacher                 | 1        | —        | Nursing Station Handiman          | 1              | —        |
| D.O.T.                  | 3        | —        | Nursing Station Cleaning Women    | —              | 1        |
| Game Management Officer | —        | —        | Store clerk H.B.C.                | 1              | —        |
| Store Manager H.B.C.    | 1        | —        | I.A. & N.D. Guides & Interpreter. | 1              | —        |
| Nurse                   | —        | 2        |                                   |                |          |
| Contractor              | 1        | —        |                                   |                |          |
| <b>TOTAL</b>            | <b>9</b> | <b>2</b> |                                   | <b>5</b>       | <b>2</b> |

Of these 18 permanent positions six were filled by the Indians and one by a Metis. The whites fill positions requiring specialized skills, while non-whites fill those suitable for semi or unskilled labour.

### CASUAL LABOUR

Opportunities for casual labour vary from year to year with the amount of entrepreneurial activity in the area. Demands for casual labour have been high during periods of exploration and drilling, when the fishing and hunting lodges were being constructed, and when the C.N.T. land line was being put through.

Demands for casual labour are higher during the summer at Norman Wells, and periodically a boatload of men will make the trip down to this settlement to see if there are jobs available, and to make enquiries about future openings.

Local demands for casual labour are limited. The contractor employs some part-time help. During the summer the H.B.C. increases their staff and employs a number of men to unload and move freight, and for miscellaneous short term jobs. N.T.C.L., employ some people on a casual or seasonal basis. One man has been regularly employed by them during the summer for the last ten years as a river pilot, and others are engaged on an hourly basis to unload barges. Some men have held jobs as deck hands on the barges and others have found employment at their depot at Norman Wells.

Casual labour jobs are obtained through the D.I.A. & N.D. who have community development projects in operation almost throughout the year. To some extent these projects are timed so as to provide work either before or after the trapping season and when other employment is not available.

The table below shows the agencies and number of people in casual or seasonal employment for the year 1966.

### FORT GOOD HOPE

TABLE 43. SEASONAL and CASUAL EMPLOYMENT OF INDIANS AND METIS 1966

| EMPLOYER                                     | MALE | FEMALE | TOTAL |
|--|------|--------|-------|
| Department of Indian Affairs & Northern Dev. | 37   | —      | 37    |
| Department of Transport.                     | 4    | —      | 4     |
| Northern Transportation Co. Ltd.             | 10   | —      | 10    |
| Imperial Oil Ltd.                            | 12   | —      | 12    |
| Hudson's Bay Company.                        | —    | 1      | 1     |
| Local Contractor                             | 8    | —      | 8     |
| TOTAL  | 71   | 1      | 72    |

### INCOME FROM HANDICRAFTS

A small amount of beaded leather work is made for resale, and is custom made to meet the requests of the white residents. As the materials used for these are purchased locally, and since the volume of production is so small, the amount of income derived from this source is minimal.

## TRAPPING

The number of licences issued to males in this settlement was 70, representing 86 per cent of the male labour force. From the following table it can be seen that 31 or 44 per cent of this number trapped during the first month of the season. If it is assumed, as it was in the discussion on Colville Lake, that the number of individuals trading fur in December represents the total number of trappers for the first half of the trapping season, then 51 men, representing 75 per cent of the men holding General Hunting Licences, were active trappers during December.

### FORT GOOD HOPE

TABLE 44. OCCASIONS FUR SOLD TO LOCAL TRADER 1966.

| NOVEMBER                                |  |   |   |   | DECEMBER                                |   |    |    |   |   |   |
|---|--|---|---|---|---|---|----|----|---|---|---|
| Number of<br>Individuals<br>Trading Fur | Number<br>of times an indi-<br>vidual traded fur |   |   |   | Number of<br>Individuals<br>Trading Fur | No. of times an indi-<br>vidual traded Fur. |    |    |   |   |   |
|   | 1  | 2 | 3 | 4 |   | 1   | 2  | 3  | 4 | 5 |   |
| 35(4)                                   | 21   | 8 | 2 | — | —                                       | 53(4)                                       | 32 | 13 | 3 | 4 | 1 |

Source: Monthly Returns Of The Fur Traders Record Book

Women Trading Fur Is Shown In Parenthesis.

Thirty nine percent of the individual fur sales for the month of December were for two or more sales per individual. As people return to the settlement during the third week of December to celebrate the Christmas festivities, this percentage might indicate that a number of trapping groups do not go any great distance from the settlement. If they do, the men are spending a considerable amount of time travelling that could be utilized in trapping.

The dollar value of fur sales in December (table 18) indicated that 76 per cent were for amounts under \$75, 15 per cent were for amounts from \$76 to \$199, and the remaining 9 per cent were for sales in excess of \$200. These figures might suggest that trapping was a major economic activity for 24 per cent of the people during this month.

## UNEARNED INCOME

In this settlement 52 out of 53 households receive some form of unearned income. This ranges from \$20 for treaty payments to over \$2000 accumulated payments from all sources; the household average is \$940.

The total receipts from these sources of income amounts to \$49,833.00, which represents approximately 41 per cent of the total cash income for both groups. Family Allowances, Social Security and Disability Pensions represent almost half of the total unearned income.

Twenty-three people are in receipt of Social Security payments and Disability Pensions. These people are distributed between 18 households, and their income often represents the only form of income for the household. The following table shows the distribution of income by households.

TABLE 45  
UNEARNED INCOME BY HOUSEHOLD - 1966

| Household | Treaty Payments | Family Allowance | Social Security | Disability Pensions | Social Assistance | Total    |
|-----------|-----------------|------------------|-----------------|---------------------|-------------------|----------|
| 1         | 10.00           | —                | 900.00          | —                   | —                 | 910.00   |
| 2         | 10.00           | 265.00           | —               | —                   | —                 | 275.00   |
| 3         | 40.00           | 131.00           | —               | —                   | 640.00            | 811.00   |
| 4         | 40.00           | 276.00           | —               | —                   | 165.00            | 481.00   |
| 5         | 5.00            | —                | —               | —                   | —                 | 5.00     |
| 6         | 60.00           | 240.00           | —               | —                   | 1236.00           | 1536.00  |
| 7         | 40.00           | 96.00            | 1260.00         | —                   | —                 | 1396.00  |
| 8         | 40.00           | 149.00           | —               | —                   | 1711.00           | 1900.00  |
| 9         | 15.00           | —                | 1260.00         | 900.00              | 699.00            | 2874.00  |
| 10        | 20.00           | 144.00           | —               | —                   | —                 | 164.00   |
| 11        | 20.00           | 72.00            | —               | —                   | 1060.00           | 1152.00  |
| 12        | 30.00           | 16.00            | —               | 900.00              | —                 | 946.00   |
| 13        | 15.00           | 96.00            | 900.00          | —                   | 231.00            | 1242.00  |
| 14        | 55.00           | 404.00           | —               | —                   | —                 | 459.00   |
| 15        | 20.00           | 52.00            | —               | —                   | 500.00            | 572.00   |
| 16        | 105.00          | 424.00           | —               | —                   | 1107.00           | 1636.00  |
| 17        | 45.00           | 92.00            | —               | —                   | 675.00            | 812.00   |
| 18        | 55.00           | 445.00           | —               | —                   | 109.00            | 609.00   |
| 19        | 5.00            | —                | —               | 900.00              | 420.00            | 1325.00  |
| 20        | 45.00           | 480.00           | —               | —                   | —                 | 525.00   |
| 21        | 30.00           | 22.00            | 1260.00         | 900.00              | —                 | 2212.00  |
| 22        | 45.00           | 336.00           | —               | —                   | —                 | 381.00   |
| 23        | 35.00           | 107.00           | —               | —                   | 667.00            | 809.00   |
| 24        | 35.00           | 333.00           | —               | —                   | —                 | 368.00   |
| 25        | 15.00           | —                | 1260.00         | —                   | —                 | 1275.00  |
| 26        | 10.00           | —                | 1350.00         | —                   | —                 | 1360.00  |
| 27        | 20.00           | 64.00            | —               | —                   | .25.00            | 109.00   |
| 28        | 35.00           | 312.00           | —               | —                   | 48.00             | 395.00   |
| 29        | 15.00           | —                | 1485.00         | —                   | —                 | 1500.00  |
| 30        | 25.00           | 64.00            | —               | —                   | 542.00            | 631.00   |
| 31        | 10.00           | —                | 2520.00         | —                   | —                 | 2530.00  |
| 32        | —               | —                | 1260.00         | —                   | —                 | 1260.00  |
| 33        | 20.00           | —                | —               | —                   | —                 | 20.00    |
| 34        | 45.00           | 467.00           | —               | —                   | —                 | 512.00   |
| 35        | 25.00           | 144.00           | —               | —                   | 60.00             | 229.00   |
| 36        | 15.00           | 78.00            | —               | —                   | 360.00            | 453.00   |
| 37        | 20.00           | 221.00           | —               | —                   | —                 | 241.00   |
| 38        | 20.00           | 20.00            | —               | —                   | 490.00            | 530.00   |
| 39        | 65.00           | 264.00           | 1260.00         | —                   | 266.00            | 1854.00  |
| 40        | 15.00           | —                | 1260.00         | —                   | 105.00            | 1380.00  |
| 41        | 20.00           | 144.00           | —               | —                   | 190.00            | 354.00   |
| 42        | 20.00           | 16.00            | —               | —                   | —                 | 36.00    |
| 43        | 50.00           | 404.00           | —               | —                   | —                 | 454.00   |
| 44        | 15.00           | —                | 2160.00         | —                   | —                 | 2175.00  |
| 45        | 5.00            | 353.00           | —               | —                   | —                 | 358.00   |
| 46        | —               | 282.00           | —               | —                   | —                 | 282.00   |
| 47        | —               | —                | 2160.00         | —                   | 665.00            | 665.00   |
| 48        | —               | —                | —               | —                   | —                 | 2160.00  |
| 49        | 5.00            | 120.00           | 900.00          | —                   | 113.00            | 1138.00  |
| 50        | —               | 207.00           | 1440.00         | —                   | —                 | 1647.00  |
| 51        | —               | —                | 1260.00         | —                   | —                 | 1260.00  |
| 52        | —               | 228.00           | —               | —                   | 1397.00           | 1625.00  |
| 53        | —               | —                | —               | —                   | —                 | —        |
| TOTAL     | 1290.00         | 7568.00          | 23895.00        | 3600.00             | 13480.00          | 49833.00 |

## COMMUNITY GROSS INCOME

For 1966 the household average of cash income from all sources was \$2298.00. Of this \$940.00 was obtained from sources of unearned income, leaving \$1358.00 to be obtained from wages and fur sales. The household average of income from trapping was approximately \$332.00, which leaves a little over \$1000.00 as the average income from wages.

The following table gives the distribution of households by the composition of a household and its gross income, and the affects on averages of so small a population can be seen by the fact that the gross cash income of 12 households is over \$3000.00.

TABLE 46

### FORT GOOD HOPE

#### COMPOSITION & GROSS CASH INCOME OF HOUSEHOLDS – 1966

| Composition of Households |          | Gross Income per Household |         |           |           |           |           |       |
|---------------------------|----------|----------------------------|---------|-----------|-----------|-----------|-----------|-------|
| Adults                    | Children | Under 500                  | 500-999 | 1000-1999 | 2000-2999 | 3000-3999 | 4000-4999 | 5000+ |
| 1                         | —        | —                          | 2       | 3         | —         | —         | —         | —     |
| 2                         | —        | —                          | —       | 2         | 2         | —         | —         | —     |
| 3                         | —        | —                          | —       | 1         | 3         | 1         | —         | 1     |
| 4                         | —        | —                          | —       | —         | —         | 1         | —         | —     |
| 1                         | 2        | 1                          | —       | —         | —         | —         | —         | —     |
| 1                         | 3        | —                          | —       | —         | —         | 1         | —         | —     |
| 1                         | 5        | —                          | —       | 1         | —         | —         | —         | —     |
| 2                         | 1        | —                          | —       | 1         | —         | —         | —         | —     |
| 2                         | 2        | —                          | 1       | 1         | —         | —         | 1         | —     |
| 2                         | 3        | —                          | —       | 1         | —         | —         | —         | —     |
| 2                         | 4        | —                          | —       | —         | —         | —         | 1         | —     |
| 2                         | 5        | —                          | —       | 1         | 1         | —         | —         | —     |
| 2                         | 7        | —                          | —       | 3         | —         | —         | —         | 1     |
| 2                         | 8        | —                          | —       | 1         | —         | —         | —         | —     |
| 3                         | 1        | —                          | 1       | 1         | 1         | —         | —         | —     |
| 3                         | 2        | —                          | 1       | —         | —         | —         | —         | —     |
| 3                         | 4        | —                          | —       | 1         | —         | —         | —         | —     |
| 3                         | 5        | —                          | —       | —         | 1         | —         | —         | —     |
| 4                         | 1        | —                          | —       | —         | 1         | —         | —         | —     |
| 4                         | 2        | —                          | —       | 1         | 1         | —         | —         | —     |
| 4                         | 3        | —                          | —       | —         | 1         | —         | —         | —     |
| 4                         | 4        | —                          | —       | 1         | —         | —         | —         | —     |
| 4                         | 7        | —                          | —       | —         | 1         | —         | —         | —     |
| 5                         | 1        | —                          | —       | —         | 1         | —         | —         | —     |
| 5                         | 3        | —                          | —       | —         | —         | —         | 1         | —     |
| 5                         | 5        | —                          | —       | —         | 1         | —         | —         | —     |
| 5                         | 6        | —                          | —       | —         | —         | —         | —         | 1     |
| 6                         | 3        | —                          | —       | —         | —         | —         | 2         | —     |
| 6                         | 11       | —                          | —       | —         | 1         | —         | —         | —     |
| 7                         | 6        | —                          | —       | —         | —         | 1         | —         | —     |
| 8                         | 3        | —                          | —       | —         | 1         | —         | —         | —     |
| Total – 53 Households     |          | 1                          | 5       | 19        | 16        | 4         | 5         | 3     |

Tables 47-50, indicate that 44 per cent of the total cash income of this group is derived from wages and 41 per cent from unearned income. Earnings from fur sales represent 15 per cent of the total cash income, and it would appear that trapping is not a major economic activity of the group.

**TABLE 47 --INDIAN CASH INCOME-- FORT GOOD HOPE 1966**

| Source   |                                       | Value        | Per cent of Total of Income for Indians |
|----------|---------------------------------------|--------------|---|
| Earned   | Wage Employment                       | \$ 37,583.00 | 39                                      |
|          | Trapping                              | \$ 17,604.00 | 19                                      |
|          | SUBTOTAL                              | \$ 55,187.00 | (58%)                                   |
| Unearned | Family Allowance and Treaty Payments  | \$ 7,363.00  | 7                                       |
|          | O.A.P., O.A.S., and Disability Allce. | \$ 21,735.00 | 23                                      |
|          | Social Assistance                     | \$ 11,306.00 | 12                                      |
|          | Unemployment Ins.                     | —            | —                                       |
|          | SUBTOTAL                              | \$ 40,404.00 | (42%)                                   |
|          | TOTAL INCOME                          | \$ 95,591.00 | 100%                                    |

**TABLE 48 --METIS CASH INCOME-- FORT GOOD HOPE 1966**

| Source   |                                       | Value        | Per cent of Total of Income for Metis |
|----------|---------------------------------------|--------------|---------------------------------------|
| Earned   | Wage Employment                       | \$ 15,139.00 | 58                                    |
|          | Trapping                              | \$ 1,663.00  | 6                                     |
|          | SUBTOTAL                              | \$ 16,802.00 | (64%)                                 |
| Unearned | Family Allowance and Treaty Payments  | \$ 1,495.00  | 6                                     |
|          | O.A.P., O.A.S., and Disability Allce. | \$ 4,320.00  | 17                                    |
|          | Social Assistance                     | \$ 2,174.00  | 8                                     |
|          | Unemployment Ins.                     | \$ 1,440.00  | 5                                     |
|          | SUBTOTAL                              | \$ 9,429.00  | (36%)                                 |
|          | TOTAL INCOME                          | \$ 26,231.00 | 100%                                  |

TABLE 49. INDIAN AND METIS CASH INCOME AS A PERCENTAGE  
PROPORTION OF THE TOTAL CASH INCOME OF BOTH

|            | Wage<br>Employment | Trapping | Unearned<br>Income |
|------------|--------------------|----------|--------------------|
| Indians    | 31                 | 14       | 33                 |
| Metis      | 13                 | 1        | 8                  |
| Total 100% | 44                 | 15       | 41                 |

TABLE 50. THE ABOVE AS A PERCENTAGE OF THE TOTAL OF  
EACH TYPE OF INCOME

|         | Wage<br>Employment | Trapping | Unearned<br>Income |
|---------|--------------------|----------|--------------------|
| Indians | 71                 | 91       | 81                 |
| Metis   | 29                 | 9        | 19                 |
| Total   | 100%               | 100%     | 100%               |

#### REAL INCOME

For this settlement, the imputed monetary value of the game take amounts to \$13,682.00, and represents 11 per cent of the real income of the group (see appendix IX). Of this 9 per cent is taken by the Indians. The average of the 11 per cent represents an additional \$300 per household, or \$260 per hunter. But, due to the large variation in the numbers of adults per household, the effect of permanent employment on time available for hunting, and of group sharing patterns, these figures do not reflect the true amount of game accruing to a household.

It would seem that all that can really be indicated is that the game take of the group would add 11 per cent in cash value to the money income of the group if this produce was marketable at the allotted prices. As far as the Indians are concerned there is an additional income in the form of the animals killed on the organized hunt. As has been mentioned these animals are stored in a freezer and portions distributed at regular intervals.

The question raised by the allocation of a cash value to country food is whether it would be replaceable by store bought food if the game taken was marketed. Meat imported into the settlement sells at prices well in excess of those allotted to country produce.

#### SUMMARY

Cash income from wages and unearned income are of almost equal proportions in this settlement and constitute 85 percent of the gross income. It would appear from this that the emphasis on trapping as a major source of income is low.

That the cash value of the game and income from fur sales represents 25 per cent of the actual income of the group might to some extent be a result of employment affecting the amount of time people have to spend on trapping and hunting. It might also result from the fact that there is a higher dependency on income from wages and unearned income to meet need requirements.

A minimal amount of handicrafts appear to be produced in this settlement and the income from this source would appear to be very low.

### FORT NORMAN

#### LABOUR FORCE & WAGE EMPLOYMENT

The number of Indians and Metis in the labour force (16-65 years) in the summer of 1966 was 68 men and 51 women, who represented 53 per cent of the population. These figures are in excess of the number of opportunities for permanent wage employment in, or near, the community.

Opportunities for casual labour employment are more available to these people as they are closer to the hunting lodges in the Mackenzie Mountains and on Great Bear Lake. However, for the latter, they are competing with the Fort Franklin people who are more familiar with the area. After the initial period of construction of these lodges, and employment as guides, the Fort Norman group are more in demand as guides at the hunting lodges, and the Fort Franklin people at the fishing lodges.

#### PERMANENT EMPLOYMENT

Of the 21 permanent jobs shown in the accompanying table nine were held by the Indians and Metis. Apart from the contractor and his sons who constitute one self-employed group, the other jobs fall into the same categories as occur at the other settlements, and for the same reasons.

### FORT NORMAN

TABLE 51. OCCUPATIONS and PERMANENT EMPLOYMENT BY ETHNIC GROUP and SEX. 1966.

| OCCUPATION              | WHITE |        | OCCUPATION                       | INDIAN & METIS |        |
|-------------------------|-------|--------|----------------------------------|----------------|--------|
|                         | Male  | Female |                                  | Male           | Female |
| Area Administrator      | 1     | —      | School Janitor                   | 1              | —      |
| R.C.M.P. Officer        | 2     | —      | Nursing Station Handiman         | 1              | —      |
| Teacher                 | 1     | 1      | Nursing Station Cleaning woman   | —              | 1      |
| Missionaries            | 2     | —      | Store clerk H.B.C.               | —              | 1      |
| Game Management Officer | 1     | —      | I.A & N.D. Guides & Interpreter. | 2              | —      |
| Store Manager H.B.C.    | 1     | —      | Diesel Engineer (I.A.N.D.)       | 1              | —      |
| H.B.C. Clerk            | 1     | —      | Labourers For Contractor         | 2              | —      |
| Nurse                   | —     | 1      |                                  |                |        |
| Contractor.             | 1     | —      |                                  |                |        |
| TOTAL                   | 10    | 2      |                                  | 7              | 2      |

In relation to the Indians, the Metis derive the major part of their income from wage employment. Six out of the nine permanent jobs are held by the Metis, and one Metis male is assured of summer employment as Assistant Game Officer. Another is permanently employed on a prevailing rate basis. One other man is an active trapper and a high wage earner from seasonal and casual employment, and another relies on casual wage employment only. The fur sales of the first of these two men accounts for almost half of that for the whole group. The contractor and his sons constitute the remainder of the employed Metis population.

### CASUAL LABOUR

As with the other settlements, opportunities for casual labour in the private sector have varied from year to year. But with the development of the hunting lodges there is now a regular seasonal demand for guides at these establishments.

From the casual and seasonal employment figures given below, it can be seen that the Federal Government employ the largest number of people on a short-term basis.

### FORT NORMAN

TABLE 52. SEASONAL and CASUAL EMPLOYMENT OF INDIANS AND METIS 1966

| EMPLOYER                                     | MALE | FEMALE | TOTAL |
|--|------|--------|-------|
| Department of Indian Affairs & Northern Dev: | 47   | 6      | 53    |
| Northern Transportation Co. Ltd.             | 12   | 2      | 14    |
| Hunting Lodges                               | 11   | —      | 11    |
| Imperial Oil Ltd.                            | 3    | 1      | 4     |
| Hudson's Bay Company                         | —    | 1      | 1     |
| Local Contractor                             | 2    | —      | 2     |
| Fire Ranger                                  | 1    | —      | 1     |
| TOTAL  | 76   | 10     | 86    |

### INCOME FROM HANDICRAFTS

As stated earlier, there is no defined outlet for handicraft producers other than the Catholic Missionary who purchases a limited amount of beaded leather products. But, there is a considerable amount of sale of these handicrafts to the white people in the community. It would be difficult to estimate the income derived from the sale of handicrafts. They were certainly more easily obtainable in this settlement, and there appeared to be some tanning of moose hides. One estimate by a local source, of the approximate value of handicrafts sold in a year, was \$3000.00.

### TRAPPING

The 58 men to whom licences were issued in this community represent approximately 85 per cent of the male labour force. Of these licence holders, 24 per cent sold fur in November and 57 per cent in December, which would suggest that barely half of those to whom licences were issued used them in the first half of the trapping season.

The number of sales of fur for the month of December indicates that one third of the people selling fur made two or more sales for the month. The dollar value of these sales (table 18) shows that 73 per cent were for amounts under \$75, 5 per cent were for amounts between \$76 - \$199, and 22 per cent were for amounts over \$200.

## FORT NORMAN

TABLE 53. OCCASIONS FUR SOLD TO LOCAL TRADER - 1966

| NOVEMBER                                |   |   |   |   |   | DECEMBER                                |  |   |   |   |   |
|---|---|---|---|---|---|---|--|---|---|---|---|
| Number of<br>Individuals<br>Trading Fur | Number of times an<br>Individual traded Fur |   |   |   |   | Number of<br>Individuals<br>Trading Fur | Number of times an<br>Individual traded Fur. |   |   |   |   |
|   | 1   | 2 | 3 | 4 | 5 |   | 1  | 2 | 3 | 4 | 5 |
| 14                                      | 14  | - | - | - | - | 33(2)                                   | 23   | 6 | 3 | 1 | - |

Women trading fur is shown in parenthesis.

Source: Monthly returns of the fur trader's record book.

These figures might suggest that trapping is a major economic activity to a relatively small proportion of trappers who return infrequently to sell fur.

## UNEARNED INCOME

Of the 41 households in this settlement 39 are in receipt of some form of unearned income. These range from \$5 for treaty payments to over \$2000 from all sources. The household average is \$624.00.

The total receipts from these sources of income amounts to \$25,585.00, which represents 23 percent of the total cash income of both groups. Social Security payments represent almost half of the total unearned income.

Eleven people were in receipt of Social Security payments. These people were distributed among ten households and their incomes provided the largest source of cash income for the household. The following table gives the distribution of unearned income by households.

**TABLE 54**  
**UNEARNED INCOME BY HOUSEHOLDS – 1966**

| Household | Treaty Payments | Family Allowance | Social Security | Disability Pensions | Social Assistance | Total     |
|-----------|-----------------|------------------|-----------------|---------------------|-------------------|-----------|
| 1         | \$ 10           | 159.00           | 900.00          | —                   | 281.00            | 1350.00   |
| 2         | 50              | 436.00           | —               | —                   | 15.00             | 501.00    |
| 3         | 20              | 67.00            | 1260.00         | —                   |                   | 1347.00   |
| 4         | 25              | 110.00           | 900.00          | —                   | 15.00             | 1050.00   |
| 5         | 30              | 216.00           | —               | —                   | 35.00             | 281.00    |
| 6         | 5               | 168.00           | —               | —                   | 300.00            | 473.00    |
| 7         | 35              | 139.00           | 1260.00         | —                   | 1255.00           | 2689.00   |
| 8         | 5               | —                | 1260.00         | —                   | 860.00            | 2125.00   |
| 9         | 30              | 312.00           | —               | —                   | 750.00            | 1092.00   |
| 10        | 20              | 108.00           | —               | —                   | —                 | 128.00    |
| 11        | 20              | 91.00            | —               | —                   | 589.00            | 700.00    |
| 12        | 5               | —                | 900.00          | —                   | —                 | 905.00    |
| 13        | 40              | 260.00           | 1260.00         | —                   | 225.00            | 1785.00   |
| 14        | 35              | —                | —               | —                   | 201.00            | 236.00    |
| 15        | 45              | 360.00           | —               | —                   | 15.00             | 420.00    |
| 16        | 15              | —                | —               | —                   | 350.00            | 365.00    |
| 17        | 5               | —                | —               | —                   | —                 | 5.00      |
| 18        | 45              | 405.00           | —               | —                   | 15.00             | 465.00    |
| 19        | 30              | 155.00           | 900.00          | —                   | 30.00             | 1115.00   |
| 20        | 35              | 360.00           | —               | —                   | —                 | 395.00    |
| 21        | 20              | 137.00           | 1260.00         | —                   | 155.00            | 1572.00   |
| 22        | 10              | —                | —               | —                   | —                 | 10.00     |
| 23        | 15              | 72.00            | —               | —                   | —                 | 87.00     |
| 24        | 20              | 101.00           | —               | —                   | 15.00             | 136.00    |
| 25        | 35              | 322.00           | —               | —                   | 10.00             | 367.00    |
| 26        | 40              | 392.00           | —               | —                   | 25.00             | 457.00    |
| 27        | 40              | 153.00           | —               | —                   | 385.00            | 578.00    |
| 28        | 35              | 336.00           | —               | —                   | 235.00            | 606.00    |
| 29        | 50              | 291.00           | —               | —                   | —                 | 341.00    |
| 30        | —               | 64.00            | —               | —                   | —                 | 64.00     |
| 31        | 5               | —                | —               | —                   | —                 | 5.00      |
| 32        | —               | —                | —               | —                   | —                 | —         |
| 33        | —               | —                | —               | —                   | —                 | —         |
| 34        | —               | 572.00           | —               | —                   | —                 | 572.00    |
| 35        | —               | —                | 1260.00         | —                   | —                 | 2160.00   |
| 36        | —               | 124.00           | —               | —                   | —                 | 124.00    |
| 37        | —               | 16.00            | —               | —                   | —                 | 16.00     |
| 38        | —               | 72.00            | —               | —                   | —                 | 72.00     |
| 39        | —               | 96.00            | —               | —                   | 270.00            | 366.00    |
| 40        | —               | 96.00            | —               | —                   | 385.00            | 481.00    |
| 41        | —               | 144.00           | —               | —                   | —                 | 144.00    |
| Total     | 775             | 6,334.00         | 12,060.00       | —                   | 6,416.00          | 25,585.00 |

### COMMUNITY GROSS INCOME

The household average of cash income from all sources is \$2680.00; of this, \$624.00 was obtained from sources of unearned income, leaving \$2056.00 as the income obtained from wages and fur sales. The household average of income from trapping was approximately \$247.00 which leaves \$1809.00 as the average income from wages.

The effect of a small population on averages is again visible in the following table, in which nearly one third of the households have an income above that of the average.

**TABLE 55**  
**FORT NORMAN**  
**COMPOSITION & GROSS CASH INCOME OF HOUSEHOLDS – 1966**

| Composition of Households |          | Gross Income per Household |         |           |           |           |           |       |
|---------------------------|----------|----------------------------|---------|-----------|-----------|-----------|-----------|-------|
|                           |          | Under 500                  | 500-999 | 1000-1999 | 2000-2999 | 3000-3999 | 4000-4999 | 5000+ |
| Adults                    | Children |                            |         |           |           |           |           |       |
| 1                         | —        | 1                          | 1       | 1         | —         | —         | 1         | —     |
| 2                         | —        | —                          | —       | —         | 1         | —         | 1         | —     |
| 3                         | —        | —                          | 2       | 1         | —         | —         | —         | —     |
| 5                         | —        | —                          | —       | —         | —         | —         | —         | 1     |
| 7                         | —        | —                          | —       | 1         | —         | —         | —         | —     |
| 1                         | 5        | —                          | —       | 1         | —         | —         | —         | —     |
| 1                         | 6        | 1                          | —       | —         | —         | —         | —         | —     |
| 2                         | 1        | —                          | —       | —         | 1         | —         | —         | 1     |
| 2                         | 2        | —                          | —       | —         | 1         | —         | —         | 1     |
| 2                         | 3        | —                          | —       | —         | —         | —         | 1         | —     |
| 2                         | 5        | —                          | —       | —         | 2         | —         | —         | —     |
| 2                         | 6        | —                          | —       | —         | 1         | —         | —         | —     |
| 2                         | 7        | —                          | —       | —         | —         | —         | —         | 1     |
| 2                         | 8        | —                          | —       | —         | —         | 1         | —         | 1     |
| 3                         | 1        | —                          | —       | 1         | 1         | —         | —         | —     |
| 3                         | 2        | —                          | —       | 2         | —         | —         | —         | 1     |
| 3                         | 3        | —                          | —       | 1         | —         | —         | —         | —     |
| 3                         | 4        | —                          | 1       | —         | —         | —         | —         | —     |
| 3                         | 6        | —                          | —       | 1         | 1         | —         | —         | —     |
| 4                         | 1        | —                          | —       | —         | —         | —         | —         | 1     |
| 4                         | 2        | —                          | —       | 1         | —         | —         | —         | —     |
| 4                         | 3        | —                          | —       | —         | —         | 1         | —         | —     |
| 4                         | 6        | —                          | 1       | —         | 1         | —         | —         | —     |
| 5                         | 4        | —                          | —       | —         | 1         | —         | —         | —     |
| 6                         | 2        | —                          | —       | —         | —         | —         | 1         | —     |
| Total – 41 Households     |          | 2                          | 5       | 10        | 11        | 2         | 4         | 7     |

Figure IV in the appendix gives a graphic representation of the relationships of the various sources of income, and those included below give a more detailed breakdown of the figures. From both, it can be seen that the income from trapping represents only a small portion of the total cash income of these groups. Tables 56-59 indicate that the income of the smaller population of Metis represents 41 percent of the total income, and of this their income from wage earnings is only slightly less than that of the larger Indian population. The income from wage employment represents 68 per cent of the income of the whole group.

TABLE 56 -INDIAN CASH INCOME-- FORT NORMAN 1966

| Source              |                                       | Value       | Per cent of Total of Income for Indians |
|---------------------|---------------------------------------|-------------|---|
| <b>Earned</b>       | Wage Employment                       | \$39,292.00 | 57                                      |
|                     | Trapping                              | \$7,915.00  | 12                                      |
|                     | <b>SUBTOTAL</b>                       | \$47,207.00 | (69%)                                   |
| <b>Unearned</b>     | Family Allowance and Treaty Payments  | \$5,964.00  | 9                                       |
|                     | O.A.P., O.A.S., and Disability Allce. | \$9,900.00  | 14                                      |
|                     | Social Assistance                     | \$5,633.00  | 8                                       |
|                     | Unemployment Ins.                     | —           | —                                       |
|                     | <b>SUBTOTAL</b>                       | \$21,497.00 | (31%)                                   |
| <b>TOTAL INCOME</b> |                                       | \$68,704.00 | 100%                                    |

TABLE 57 --METIS CASH INCOME-- FORT NORMAN 1966

| Source              |                                       | Value       | Per cent of Total of Income for Metis |
|---------------------|---------------------------------------|-------------|---------------------------------------|
| <b>Earned</b>       | Wage Employment                       | \$34,907.00 | 85                                    |
|                     | Trapping                              | \$2,216.00  | 5                                     |
|                     | <b>SUBTOTAL</b>                       | \$37,123.00 | (90%)                                 |
| <b>Unearned</b>     | Family Allowance and Treaty Payments  | \$1,145.00  | 3                                     |
|                     | O.A.P., O.A.S., and Disability Allce. | \$2,160.00  | 5                                     |
|                     | Social Assistance                     | \$783.00    | 2                                     |
|                     | Unemployment                          | —           | —                                     |
|                     | <b>SUBTOTAL</b>                       | \$4,088.00  | (10%)                                 |
| <b>TOTAL INCOME</b> |                                       | \$41,211.00 | 100%                                  |

TABLE 58. INDIAN AND METIS CASH INCOME AS A PERCENTAGE  
PROPORTION OF THE TOTAL CASH INCOME OF BOTH

|            | Wage<br>Employment | Trapping | Unearned<br>Income |
|------------|--------------------|----------|--------------------|
| Indians    | 36                 | 7        | 19                 |
| Metis      | 32                 | 2        | 4                  |
| Total 100% | 68                 | 9        | 23                 |

TABLE 59. THE ABOVE AS A PERCENTAGE OF THE TOTAL OF  
EACH TYPE OF INCOME

|         | Wage<br>Employment | Trapping | Unearned<br>Income |
|---------|--------------------|----------|--------------------|
| Indians | 53                 | 78       | 84                 |
| Metis   | 47                 | 22       | 16                 |
| Total   | 100%               | 100%     | 100%               |

## REAL INCOME

Appendix II states the General Hunting Licences issued for each settlement and the total value of the game taken.

The imputed value of the game taken in this settlement amounts to \$12963.00, and represents 11 per cent of the real income of the group (Appendix IV). Of this, 10 per cent was taken by the Indians. The dollar value of the game taken is \$316, or \$213 per hunter.

The difference in the percentage of the game taken between the two groups may not only be a result of the difference in the size of the two groups, but may be affected by the numbers of people permanently employed. Proportionately there are less Indians permanently employed, and consequently a larger number of them travelling in the bush where they are more liable to encounter game.

Dollar value averages of game take are not a true guide to the amount of game accruing to a household. Patterns of sharing, employment and household composition are factors influencing the amount of country food consumed by a household. The value of the animals taken on the government sponsored hunt have been omitted from the total of the game take, as this meat is available only to the Indians.

## SUMMARY

The income from wages is almost three times that which is available from sources of unearned income, and the two combined represent 91 per cent of the total cash income of the settlement. The income from trapping and hunting represents 19 per cent of the real income, and of this, the lesser return is from trapping.

The higher earnings from wage labour might to some extent affect the need of people to trap to supplement their income, and the effect of permanent or long term casual employment may be a restriction of their ability to do so. The dollar value of fur sales for the month of December indicates that approximately 24 per cent of them were for amounts over \$75. This percentage might suggest that trapping was a major economic activity of roughly one quarter of the active trappers.

Income from the sale of handicrafts appears to be higher than at Fort Good Hope, but it was difficult to estimate the extent of this income as a great deal of it was sold to the white population.

## FORT FRANKLIN

### LABOUR FORCE AND WAGE EMPLOYMENT

The number of Indians and Metis in the labour force (16-65 years) in December of 1966 was 82 men and 80 women, who together represented 48 per cent of the total Indian and Metis population. Opportunities for wage employment in, or near the community were insufficient to absorb this population of adults.

At Fort Franklin the labour force is almost balanced in regard to sex ratios. With the predominance of females in the younger age groups there will be a dominance of females in the labour force in ten years. If the percent levels of education are maintained or bettered, there is going to be a large reservoir of females with some skills who are unable to utilize these in an environment, which unless radically altered, will continue to cater to the more masculine occupations of construction work, guiding, mining and so forth.

Of the permanent jobs available in the community, five are filled by women, and, except for the co-op. clerks and community health worker, the others required no formal training or education.

If the present imbalance in the birth sex ratios continue, the women of this community are going to have problems obtaining marriage partners from among the local male population, and ultimately with the problem of self-maintenance. If they will be unable to achieve the latter through the utilization of acquired skills, and are unwilling to emigrate to larger centers, the avenues for wage employment would appear to be somewhat circumscribed. At present only 12 out of 101 persons having summer or casual employment were women, and these were engaged as unskilled labour.

### PERMANENT EMPLOYMENT

Of the 20 permanent jobs shown in the accompanying table eight were held by the Indians, and as stated previously, five of these jobs were held by women. As with the other settlements, a transient white population fills the posts requiring a higher level of education or more specialized skills.

Two of the white residents have each held two posts. The Catholic Missionary acted as manager of the co-op. until the spring of 1967, and the school principal was also the acting area administrator until the appointment of an administrator in April of the same year.

## FORT FRANKLIN

TABLE 60. OCCUPATIONS and PERMANENT EMPLOYMENT BY ETHNIC GROUP and SEX, 1966

| WHITE                          |                   |        | INDIAN & METIS                    |                   |        |
|--------------------------------|-------------------|--------|-----------------------------------|-------------------|--------|
| OCCUPATION                     | NUMBERED EMPLOYED |        | OCCUPATION                        | NUMBERED EMPLOYED |        |
|                                | Male              | Female |                                   | Male              | Female |
| Teacher                        | 1                 | 4      | School Janitor                    | 1                 | —      |
| Missionaries                   | 2                 | —      | Asst. School Janitor              | —                 | 1      |
|                                |                   |        | Nursing Station<br>Handiman       | 1                 | —      |
| Store Manager H.B.C.           | 1                 | —      | Nursing Station<br>Cleaning woman | —                 | 1      |
|                                |                   |        | Community Health<br>Worker        | —                 | 1      |
| Nurse                          | —                 | 2      | Store clerk H.B.C.                | 1                 | —      |
| Diesel Enginer.<br>(I.A.&N.D.) | 1                 | —      | Co-op Clerk                       | —                 | 2      |
| Co-op Manager                  | 1                 | —      |                                   |                   |        |
| TOTAL                          | 6                 | 6      |                                   | 3                 | 5      |

## CASUAL LABOUR

As with the other settlements, the D.I.A. & N.D. employs the largest number of people on a casual labour basis. The next most important source of casual and seasonal employment is provided by the sport fishing lodges on Great Bear Lake. The number of jobs available at these lodges tend to fluctuate from year to year as they also employ Indians from other settlements. As the lodges have increased in size, and in numbers, their demands for experienced guides have steadily increased, and there appeared to have been a number of men in the settlement who were repeatedly re-employed by a particular lodge.

One family moves down to Norman Wells in the late spring to take up employment with I.O.L., and another moves to the St. Charles Rapids to work for N.T.C.L. The latter company also engages men from this settlement as guides on the lake, and as deck hands.

Figures of seasonal and casual employment for 1966 are given on following page.

### FORT FRANKLIN

**TABLE 61. SEASONAL and CASUAL EMPLOYMENT OF INDIANS AND METIS 1966**

| EMPLOYER                                     | MALE   | FEMALE | TOTAL   |
|--|--------|--------|---------|
| Department of Indian Affairs & Northern Dev: | 51     | 1      | 52      |
| Northern Transportation Co. Ltd.             | 6      | 3      | 9       |
| Sport Fishing Lodges.                        | 29     | 6      | 35      |
| Imperial Oil Ltd.                            | 2      | —      | 2       |
| Hudson's Bay Company.                        | —      | 1      | 1       |
| Great Bear Co-operative.                     | 1      | —      | 1       |
| Other Employers.                             | —      | —      | 1       |
| <br>TOTAL                                    | <br>89 | <br>12 | <br>101 |

### INCOME FROM HANDICRAFTS

As the accompanying table indicates, the production of handicrafts in this settlement has increased appreciably over a period of three years. A wide selection of these items are produced that range from beaded wearing apparel, foot wear and decorative badges to artifacts made of wood, bone and horn.

The Great Bear Co-operative acts as the local purchasing agent for handicrafts, and disposes of these items through various outlets in the Northwest Territories and southern Canada.

**Table 62. TOTAL RECEIPTS – GREAT BEAR CO-OPERATIVE**

### FORT FRANKLIN N.W.T.

| Source           | Year and Value  |                  |                  |
|------------------|-----------------|------------------|------------------|
|                  | 1964            | 1965             | 1966             |
| Co-op Store      | \$ 6782.00      | \$ 14,000.00     | \$ 34,169.00     |
| Fish Sales       | 386.00          | 1,074.00         | 590.00           |
| Sale of Firewood | 385.00          | 542.00           | 605.00           |
| Contracts        | —               | 2,530.00         | 4,511.00         |
| Handicrafts.     | 7677.00         | 13,662.00        | 15,749.00        |
| <br>TOTAL        | <br>\$ 15230.00 | <br>\$ 31,800.00 | <br>\$ 55,624.00 |

Source: D.I.A.&N.D.

The value of the co-operative lies not only in the fact that it provides another source of income, but also that it is an agency under the direction and management of the Indians.

During the period of field work the management of the co-op was taken over by one of the Metis men, and the Board of Directors was composed of all local people.

Since the summer of 1965 the co-operative has employed two women on a full time basis, and one man on an hourly basis. The pay to employees has been determined by the Board and is set at \$1.25 an hour for women and \$1.65 for men. These scales compare favourably with those paid by other employers in the private sector.

The average income earned through the production of handicrafts was approximately \$100. But the amount produced varies with individuals, and some producers earn considerably more than this. In addition to the actual earnings from the sale of handicrafts to the co-op the Indians also benefit by being able to build up an equity in the institution and to share in its dividends. The membership of the co-operative increased from 17 members in 1964 to 52 members in 1967. With a progressive increase in membership and profits this organization should begin to assume an important role in the producer-consumer and employer relationships in this community.

#### TRAPPING

Of the 82 males in the labour force 69 (or 83 percent) obtained General Hunting Licences. Of these 49 (71 percent) traded fur in December. The following table gives the number of times individuals traded fur during a two month period.

TABLE 63. OCCASIONS FUR SOLD TO LOCAL TRADER – 1966.

| NOVEMBER                             |   |   |   |   |    | DECEMBER                                |  |    |    |   |    |
|--------------------------------------|---|---|---|---|----|---|--|----|----|---|----|
| Number<br>Individuals<br>Trading Fur | Number of times an<br>Individual traded Fur |   |   |   |    | Number of<br>Individuals<br>Trading Fur | Number of times an<br>Individual traded Fur. |    |    |   |    |
|                                      | 1   | 2 | 3 | 4 | 5+ |   | 1  | 2  | 3  | 4 | 5+ |
| 17                                   | 11  | 4 | 2 | — | —  | 49 (1)                                  | 14   | 17 | 10 | 4 | 4  |

Women trading fur is shown in parenthesis.

Source: Monthly returns of the Fur Trader's Record Book.

The above table indicates that for December almost 71 per cent of those people selling fur made over two sales each, and in fact that a little less than half of them made three or more sales. The dollar value of individual sales indicates that 60 per cent of the sales were for amounts under \$75, 14 per cent were for amounts between \$76 – \$199, and 26 per cent were for amounts of \$200 and more.

These figures might suggest that trapping is a major economic activity for 40 per cent of those actively trapping, and that even though there is a high proportion of multiple sales per trapper a large number of the sales are for amounts over \$75.

The frequency and high dollar value of the sales of fur (Table 18) would appear to indicate that these people are trapping in a high yield area, and making frequent returns to the settlement to sell fur.

### UNEARNED INCOME

All of the households in this community are in receipt of unearned income from one source or another. In two instances this amounts only to the payment of treaty monies. Two households received treaty payments and social security, and twenty-one households were in receipt of family allowances and treaty payments only. The remaining twenty households received a combination of various allowances and social assistance.

The money from all sources of unearned income amounts to \$27,426.00 and represents 24 per cent of the total income of the Indians and Metis. Social Assistance payments amount to approximately .06 of the total unearned income.

Family Allowance payments account for over half of the unearned income and reflect the large number of children in the settlement.

**TABLE 64**  
**UNEARNED INCOME BY HOUSEHOLDS - 1966**

| Household    | Treaty Payments | Family Allowance | Social Security | Disability Pensions | Social Assistance | Total           |
|--------------|-----------------|------------------|-----------------|---------------------|-------------------|-----------------|
| 1            | 15.00           | —                | 300.00          | —                   | —                 | 315.00          |
| 2            | 40.00           | 168.00           | —               | —                   | 130.00            | 338.00          |
| 3            | 35.00           | 318.00           | —               | —                   | 140.00            | 493.00          |
| 4            | 40.00           | 76.00            | —               | —                   | —                 | 116.00          |
| 5            | 20.00           | 47.00            | —               | —                   | —                 | 67.00           |
| 6            | 35.00           | 384.00           | —               | —                   | —                 | 419.00          |
| 7            | 55.00           | 443.00           | 450.00          | —                   | 65.00             | 1013.00         |
| 8            | 35.00           | 211.00           | —               | —                   | —                 | 246.00          |
| 9            | 35.00           | 206.00           | —               | —                   | 135.00            | 376.00          |
| 10           | 40.00           | 438.00           | —               | —                   | 50.00             | 528.00          |
| 11           | 10.00           | —                | —               | —                   | —                 | 10.00           |
| 12           | 45.00           | 540.00           | —               | —                   | —                 | 585.00          |
| 13           | 35.00           | 139.00           | 1260.00         | —                   | —                 | 1434.00         |
| 14           | 35.00           | 182.00           | —               | —                   | —                 | 217.00          |
| 15           | 35.00           | 149.00           | 375.00          | —                   | —                 | 559.00          |
| 16           | 40.00           | 216.00           | —               | —                   | —                 | 259.00          |
| 17           | 25.00           | 144.00           | —               | —                   | 155.00            | 324.00          |
| 18           | 40.00           | 341.00           | —               | —                   | —                 | 381.00          |
| 19           | 30.00           | 240.00           | —               | —                   | —                 | 270.00          |
| 20           | 50.00           | 423.00           | —               | —                   | 145.00            | 618.00          |
| 21           | 45.00           | 528.00           | —               | —                   | —                 | 573.00          |
| 22           | 20.00           | 149.00           | —               | —                   | —                 | 169.00          |
| 23           | 45.00           | 475.00           | —               | —                   | —                 | 520.00          |
| 24           | 30.00           | 288.00           | —               | —                   | —                 | 318.00          |
| 25           | 30.00           | 264.00           | —               | —                   | —                 | 294.00          |
| 26           | 30.00           | 336.00           | —               | 360.00              | 60.00             | 786.00          |
| 27           | 10.00           | —                | 1800.00         | —                   | —                 | 1810.00         |
| 28           | 40.00           | 480.00           | —               | —                   | —                 | 520.00          |
| 29           | 20.00           | —                | —               | —                   | —                 | 20.00           |
| 30           | 50.00           | 480.00           | —               | —                   | —                 | 530.00          |
| 31           | 60.00           | 572.00           | —               | —                   | 512.00            | 1144.00         |
| 32           | 40.00           | 480.00           | —               | —                   | 55.00             | 575.00          |
| 33           | 35.00           | 228.00           | 1260.00         | —                   | —                 | 1463.00         |
| 34           | 35.00           | 288.00           | —               | —                   | —                 | 323.00          |
| 35           | 35.00           | 384.00           | —               | —                   | —                 | 419.00          |
| 36           | 45.00           | 257.00           | 900.00          | —                   | —                 | 1202.00         |
| 37           | 20.00           | 72.00            | 1260.00         | —                   | —                 | 1352.00         |
| 38           | 55.00           | 504.00           | —               | —                   | —                 | 559.00          |
| 39           | 50.00           | 504.00           | —               | —                   | —                 | 554.00          |
| 40           | 60.00           | 249.00           | 1260.00         | —                   | —                 | 1569.00         |
| 41           | 25.00           | 131.00           | —               | —                   | 124.00            | 280.00          |
| 42           | 35.00           | 288.00           | —               | —                   | 70.00             | 393.00          |
| 43           | 60.00           | 534.00           | —               | —                   | —                 | 594.00          |
| 44           | 20.00           | 72.00            | 1260.00         | —                   | —                 | 1352.00         |
| 45           | 10.00           | 72.00            | 1260.00         | —                   | 200.00            | 1542.00         |
| <b>TOTAL</b> | <b>1600.00</b>  | <b>12240.00</b>  | <b>11385.00</b> | <b>360.00</b>       | <b>1841.00</b>    | <b>27426.00</b> |

### COMMUNITY GROSS INCOME

The household average of cash income from all sources is \$2539.00. Of this \$609.00 was obtained from sources of unearned income, \$475.00 from trapping and \$1454.00 from wages. Table 65 indicates that almost one quarter of the households in this settlement had total incomes in excess of the average.

From the accompanying tables and from appendix IV it can be seen that the income from wages represents 58 per cent of the total gross income, trapping 18 per cent, and unearned income 24 per cent.

In this settlement the income from wages is a reflection of the high wage earnings of a large number of men who are seasonally employed by the tourist lodges. The permanent employment available to men in this community is less than at the other settlements.

TABLE 65

### FORT FRANKLIN

#### COMPOSITION & GROSS CASH INCOME OF HOUSEHOLDS – 1966

| Composition of Households |          | Gross Income per Household |         |           |           |           |           |       |
|---------------------------|----------|----------------------------|---------|-----------|-----------|-----------|-----------|-------|
| Adults                    | Children | Under 500                  | 500-999 | 1000-1999 | 2000-2999 | 3000-3999 | 4000-4999 | 5000+ |
| 2                         | —        | 1                          | —       | 1         | —         | —         | —         | —     |
| 3                         | —        | —                          | —       | 1         | —         | —         | —         | —     |
| 2                         | 2        | —                          | —       | 1         | 1         | —         | —         | —     |
| 2                         | 3        | —                          | —       | 1         | —         | —         | —         | —     |
| 2                         | 4        | —                          | —       | 3         | 1         | —         | —         | —     |
| 2                         | 5        | —                          | —       | 2         | —         | —         | —         | 1     |
| 2                         | 6        | —                          | 1       | 1         | —         | —         | —         | —     |
| 2                         | 7        | —                          | —       | 1         | —         | —         | —         | —     |
| 3                         | 1        | —                          | 2       | —         | 1         | —         | —         | —     |
| 3                         | 2        | —                          | —       | 2         | —         | —         | 1         | —     |
| 3                         | 4        | —                          | 1       | —         | 2         | —         | —         | —     |
| 3                         | 6        | —                          | —       | —         | 1         | 1         | —         | —     |
| 3                         | 7        | —                          | —       | —         | 1         | —         | —         | —     |
| 4                         | 1        | —                          | —       | 1         | —         | —         | —         | —     |
| 4                         | 3        | —                          | —       | —         | 1         | —         | —         | 1     |
| 4                         | 4        | —                          | —       | —         | —         | 1         | —         | 1     |
| 4                         | 5        | —                          | —       | 1         | —         | —         | —         | —     |
| 4                         | 6        | —                          | —       | —         | 2         | 1         | —         | —     |
| 4                         | 7        | —                          | —       | 1         | —         | —         | —         | —     |
| 4                         | 8        | —                          | —       | 1         | —         | —         | —         | —     |
| 5                         | 2        | —                          | —       | —         | 1         | —         | —         | —     |
| 5                         | 3        | —                          | —       | —         | 1         | —         | —         | —     |
| 5                         | 7        | —                          | —       | —         | —         | —         | —         | 1     |
| 6                         | 5        | —                          | —       | —         | —         | —         | 1         | —     |
| 7                         | 2        | —                          | —       | —         | —         | —         | —         | 1     |
| 8                         | 4        | —                          | —       | —         | —         | —         | —         | 1     |
| Total – 45 Households     |          | 1                          | 4       | 17        | 12        | 3         | 2         | 6     |

TABLE 66 -INDIAN CASH INCOME-- FORT FRANKLIN 1966

| Source       |                                       | Value        | Per cent of Total of Income for Indians |
|--------------|---------------------------------------|--------------|---|
| Earned       | *Wage Employment                      | \$62,932.00  | 58                                      |
|              | Trapping                              | \$19,713.00  | 18                                      |
|              | SUBTOTAL                              | \$82,645.00  | (76%)                                   |
| Unearned     | Family Allowance and Treaty Payments  | \$13,758.00  | 13                                      |
|              | O.A.P., O.A.S., and Disability Allce. | \$10,485.00  | 10                                      |
|              | Social Assistance                     | \$1,641.00   | 1                                       |
|              | Unemployment Ins.                     | —            | —                                       |
| TOTAL INCOME | SUBTOTAL                              | \$25,884.00  | (24%)                                   |
|              |                                       | \$108,529.00 | 100%                                    |

\*Includes Earnings from sale of Handicrafts

TABLE 67 -METIS CASH INCOME-- FORT FRANKLIN 1966

| Source       |                                      | Value      | Per cent of Total of Income for Metis |
|--------------|--------------------------------------|------------|---------------------------------------|
| Earned       | *Wage Employment                     | \$2,507.00 | 44                                    |
|              | Trapping                             | \$1,706.00 | 29                                    |
|              | SUBTOTAL                             | \$4,213.00 | (73%)                                 |
| Unearned     | Family Allowance and Treaty Payments | \$82.00    | 1                                     |
|              | O.A.P., and Disability Allce.        | \$1,260.00 | 22                                    |
|              | Social Assistance                    | \$200.00   | 4                                     |
|              | Unemployment Ins.                    | —          | —                                     |
| TOTAL INCOME | SUBTOTAL                             | \$1,542.00 | (27%)                                 |
|              |                                      | \$5,755.00 | 100%                                  |

\*Includes Earnings from sale of Handicrafts

TABLE 68. INDIAN AND METIS CASH INCOME AS A PERCENTAGE PROPORTION OF THE TOTAL CASH INCOME OF BOTH

|            | Wage<br>Employment | Trapping | Unearned<br>Income |
|------------|--------------------|----------|--------------------|
| Indians    | 56                 | 17       | 23                 |
| Metis      | 2                  | 1        | 1                  |
| Total 100% | 58                 | 18       | 24                 |

TABLE 69. THE ABOVE AS A PERCENTAGE OF THE TOTAL OF EACH TYPE OF INCOME

|         | Wage<br>Employment | Trapping | Unearned<br>Income |
|---------|--------------------|----------|--------------------|
| Indians | 96                 | 92       | 94                 |
| Metis   | 4                  | 8        | 6                  |
| Total   | 100%               | 100%     | 100%               |

### REAL INCOME

As almost one quarter of the General Hunting Licences issued to the men in this settlement were not returned for this year it was not possible to work out the total value of country food taken. An estimate based on the figures available would suggest that this may amount to approximately \$10,000.00, or 8 per cent of the real income. These figures may be an underestimation of the amount of game taken in this community, as during the migration periods strays from the caribou herds are taken in close proximity to the settlement.

### SUMMARY

One reliable source of income available to the Indians and Metis of Fort Franklin occurs through their ability to market the locally produced handicrafts. Wage earnings and income derived from the sale of handicrafts provides the largest portion of the total income of the community.

The Social Assistance in this community is low, and the bulk of the unearned income is for Social Security or Family allowances.

The dollar value of the individual fur sales indicates that 40 per cent of these sales were for amounts over \$75, and the number of sales per individual for the month of December, appeared to indicate that trappers were making frequent returns to the settlement to sell fur.

As seasonal employment provides the bulk of the wage earnings, and with few permanent jobs available to the men, there appears to be a proportionately larger amount of trapping done in this settlement.

## NORMAN WELLS

As the emphasis of this study was focused on the smaller predominantly Indian settlements and their economies the interest in Norman Wells was confined to the Indian and Metis population.

### LABOUR FORCE & EMPLOYMENT

It has been mentioned earlier that both the white and Indian-Metis population of Norman Wells is a highly transient one with a large seasonal fluctuation in numbers.

During the summer there is a considerable increase in the Indian and Metis groups. Men from various settlements in the Mackenzie District come to Norman Wells hoping to find employment. Those who do find jobs remain for some length of time, others move on to larger centers. For a number of years, one family from Fort Franklin and another from Fort Norman have moved to Norman Wells every spring to take up a regular seasonal job with I.O.L.

In 1966, the more permanent indigenous population was composed of eleven households representing twelve adult males, eleven adult females and forty-three children below the age of 16. With the exception of one man and one woman all the adults were between the ages of 16 and 65 years, and half of the men and all of the women were between the ages of 16 and 35 years. Eight of the households were Metis, two were Indian and one was an Eskimo family. With the exception of the Eskimo household, these people had lived at Norman Wells for over three consecutive years.

The employment patterns of this permanent population is given below.

| Employment. | Indian |       | Metis |       | Eskimo |       |
|-------------|--------|-------|-------|-------|--------|-------|
|             | Men    | Women | Men   | Women | Men    | Women |
| Permanent   | 2      | 1     | 5     | 2     | 1      | 1     |
| Casual      | 5      | 5     | 2     | 1     | —      | —     |

The Eskimo was married to a white woman who has been included in the above figures as she represents a part of this group.

Of the remaining adults in this population, one Metis couple were old age pensioners, and one was an unemployed adult living with his parents.

In a population as small as this, figures giving the average earnings are very much more affected by the income of the old age pensions, and the fluctuations of earnings from casual employment, and are omitted.

Salaries of permanently employed males were in excess of \$5000.00, and in excess of \$3000.00 for females, with casual and part-time workers earning between \$2000 – \$3000. Incomes of households with two wage earners was in excess of \$6000.00.

Apart from the casual labour available through I.O.L., N.T.C.L., contracting firms, and the airline companies, there was a demand for casual labour as domestics and baby-sitters that is utilized by the Indian and Metis.

No handicrafts appear to have been made for usage or for resale. Both Indians and Metis relied on store bought clothing and equipment.

## HUNTING & TRAPPING

Of the ten General Hunting Licences issued to Indians and Metis only half indicated that any game had been taken. The total of the assigned value of the same take is \$2098.00 representing only a small proportion of the total income of the group.

That the game take of this group is as small as it is might suggest that the majority of hunting done is undertaken more as a recreation than as a resource activity. There was only one Metis household head, and the old age pensioner who resorted to hunting and trapping to supplement the family resources.

## UNEARNED INCOME

There are two old age pensioners and one family receiving social assistance. The unearned income of these two families would represent a small proportion of the total gross income of the whole group.

## SUMMARY

In the case of this settlement, the building of an all weather airport and a D.O.T., installation might prolong the life of the community in the event of closure of the plant by Imperial Oil Ltd. At present the Company is the largest employer.

No handicrafts are made in this settlement, and a negligible amount of trapping and hunting is done. The level of unearned income is low in comparison to wage earnings, and the standard of living of the Indians and Metis is determined by the availability of wage employment. Here, both are of a higher standard than that found in the other settlements.

The potential to encourage industrial development is greater at Norman Wells than at any of the other settlements and is due to a number of factors. First it is much more accessible by barge and aircraft, and the distances travelled by these carriers is less than that for the other settlements which would result in a reduction of freight rates. Second, and all-weather airport opened to larger aircraft not only means good accessibility and cheaper rates, but also a more speedy delivery of personnel and freight to and from this point. Lastly, cheap fuel and hydro are available, and utilities and services exist that can be extended to accommodate an expanding community.

A continuing search for ways and means of creating employment in the area should be maintained, and feasibility studies conducted with particular attention being paid to locating these at Norman Wells.



## Chapter 6

### GENERAL CONSIDERATIONS

#### GENERAL SUMMARY

All the settlements with the exception of Colville Lake tend towards being young communities. At Fort Franklin there appears to be a larger ratio of female to male births, and a larger number of female children in the community than males.

In all the settlements there is insufficient casual or permanent employment available to the adults. The whole area is one in which migrant populations have settled into more sedentary patterns of living, and even though wage work is a fairly recent introduction into the area there appears to be a preference on the part of the Indians and Metis for wage employment and the more settled pattern of living that this allows.

#### WAGE EMPLOYMENT

Permanent wage employment has been a recent introduction to the communities. The first positions were as guides and interpreters. With the establishment of an increasing number of government agencies, positions have become available for semi-skilled people and these have been filled by the Indians and Metis. At Fort Franklin the jobs created by the nursing station and co-op have only been available since 1965. Until this time there were only two positions available to the Indians. At Colville Lake the changes have been less.

With the development of the mine at Port Radium and the oil complex at Norman Wells casual and seasonal employment has been available to people in the area but these have diminished as construction programmes were completed. Drilling operations and some maintenance jobs for unskilled labour have created other employment opportunities, and seasonal employment by the hunting and fishing lodges have helped to develop expectations of some form of wage employment. An increasing amount of casual employment has been provided by the Federal Government at periods when it is least available in the private sector.

At Norman Wells the proportion of income derived from wages is the highest for any of the settlements. The following table indicates the extent to which wage earnings have become established in the gross income levels of the settlements.

TABLE 70. GROSS EARNED INCOME

| Settlement     | Total Population | Wages & Handicrafts | As a percentage of the Gross Income |
|----------------|------------------|---------------------|-------------------------------------|
| Colville       | 75               | \$ 6,972            | 21                                  |
| Fort Good Hope | 301              | 53,722              | 44                                  |
| Fort Norman    | 226              | 73,999              | 68                                  |
| Fort Franklin  | 331              | 65,439              | 58                                  |

## UNEARNED INCOME

The population of Fort Franklin is the largest of all settlements, but the amount of unearned income for the settlement is almost on a par with that of Fort Norman, considerably less than that of Fort Good Hope, and only slightly in excess of that of Colville Lake which has a population of a quarter of its size.

TABLE 71  
COMPOSITION OF THE UNEARNED INCOME

| Settlement     | Total Population | Social Assistance \$ | Family Allowance \$ | Social Security & Disability Allce. \$ | Total \$ |
|----------------|------------------|----------------------|---------------------|--|----------|
| Colville       | 75               | 1,583                | 1,814               | 7,128                                  | 10,525   |
| Fort Good Hope | 301              | 13,480               | 8,858               | 26,055                                 | 48,393   |
| Fort Norman    | 226              | 6,416                | 7,109               | 12,060                                 | 25,585   |
| Fort Franklin  | 331              | 1,841                | 13,840              | 11,745                                 | 27,426   |

From the above table, of the three settlements, Fort Franklin would appear to have the greatest number of children and the smallest number of elderly and disabled.

This would appear to be a community with the largest number of young adults whose vigour, and shorter period of exposure to other culture patterns is perhaps expressed in the higher return from trapping. Also, situated as they are in a high food resource area, perhaps these people have had less need to apply for social assistance.

At Norman Wells the income from sources other than wages is very low in comparison to wage earnings.

## TRAPPING

The Fort Franklin people have a pattern of hunting and trapping that differs from those of the other settlements. Here the men prefer to go out singly, in pairs, or in small groups, leaving their families in the settlement.

In this way they are able to range further afield than the trappers of the other settlements, and to more quickly reach the less intensively trapped territory. This leaves the area in the immediate vicinity of the settlement to be trapped by the women and the aged, and it also means that, with their increased mobility the men can make more frequent returns to the settlement.

The men in returning from their trapping camps, bring with them a supply of fresh meat and their furs. The women appear to be satisfied with this arrangement as they can work on the fur that has been brought in at their own leisure and in more comfort, and during the absence of the men they are able to make the handicrafts that are sold to the co-op.

The tables given with each settlement showing the number of times an individual traded fur during a two month period, and the one given below, might to some extent indicate the greater efficiency of the male trapping partnership of the Fort Franklin people. Figure 4 gives the outer limits of the areas trapped by the various populations and does in fact indicate that the Fort Franklin trapper travels a greater distance from the settlement.

Not only has there been a reduction in the importance of trapping in the money economy of the settlements, but in comparison to permanent employment and government allowances it is no longer the most reliable source of income. Fluctuations in fur prices and fur cycles have made it the most unreliable source of income for the capital and energy expended, and there appears to be a trend towards less intensive trapping by an increasing number of trappers.

### GROSS COMMUNITY INCOME

From the composition of the cash income given in appendix IV it would appear that there is a similar pattern of income for Forts Franklin and Norman. The proportion of unearned income for the two is almost the same, but the Fort Franklin people appear to have made up for their smaller wage income by an increase in fur sales.

Their income from trapping is slightly in excess of that of Fort Good Hope where there is an even greater reliance on the other two forms of cash income. For the three settlements the percentage of cash income from wages and unearned income amounts to 85 per cent at Fort Good Hope, 91 per cent at Fort Norman, and 82 per cent at Fort Franklin. This might suggest that the Fort Franklin people, having the lowest proportion of cash income from sources other than fur, have made up for this deficiency by more intensive trapping.

In comparison to the permanent residents of Fort Norman and Fort Good Hope, the people at Fort Franklin have a shorter history of long term culture contact, and perhaps a pattern of saving and eking out of cash assets had not become as well established in this community. If they have no cash reserves on which to draw and only a small amount of unearned income on which to depend, there may be an insufficiency of money, or credit with the trader, to tide them over the winter; this may also be a force inducing a greater amount of trapping activity.

Another result of the shorter, less intensive, culture contact is that the people of Fort Franklin have not had as much experience in living in a settlement type of situation for long periods of time. Until the initiation of housing programs in 1961, there were little more than half a dozen log houses in the settlement. This and other factors suggest that these people are more traditional in their approach to their cycle of activities, and not only have more need to trap but are more willing to do so.

The people at Colville Lake have the fewest opportunities for wage employment, and the least number of inducements to remain in the settlement. Of all the groups, these people have most retained their orientation to their traditional way of life.

At Fort Good Hope the labour force is almost the same size as that of Fort Franklin but the gross community income is higher, and the relationships of the various sources of income in the two communities differ. Fort Franklin has a higher income from wages, and Fort Good Hope has the largest income, of all the settlements from sources of unearned income.

The gross community income for the Indians and Metis at Norman Wells would show a different relationship between the proportions of the sources of income. On a per capita basis these people would appear to have the highest cash income. Due perhaps to the high rate of permanent employment in this community people have less need to hunt and trap, or are less able to. The amount of hunting and trapping done by the Indians and Metis at Norman Wells is minimal.

The people of all the settlements are faced with the problem of being able to obtain permanent employment. At present, in order to be able to secure permanent employment people have to leave their home communities, and there appears to be a reluctance on the part of most of them to do this. The young people at high school, learning specialized trades, are going to be faced with the same problem, and the limited opportunities for skilled people in the settlements will either force people to abandon their trades and compete locally for whatever employment is available, or to migrate to larger centers in search of employment.

## CONCLUSIONS

Three conclusions were drawn as a result of the material obtained during this survey, and additional support for these was obtained from similar types of surveys and the considerable amount of literature that has been published on related problems.

The first conclusion would be the need for the selection and development of a growth centre whose economy at the present time appeared to be viable. Once the consolidation of industrial enterprises in such a center can be effected, population growth can be predicted on the basis of the estimated economic growth and the ability of the economy to sustain them at a level of desirability.

At present the low level of education and acculturation, and the narrow range of alternative skills of the Indian and Metis populations make it extremely difficult for them to move to other centers with any assurance of being able to obtain employment. Measures are required to assist these people to extend their range of competence and self-assurance in all these areas.

Financial assistance and social support are needed to help migrating families and individuals to relocate in areas in which newly acquired skills can be used to their best advantage and personal satisfaction.

Integrated plans for the area need to be formulated to accommodate the excess populations of the growth centre and the other settlements, so that occupational and geographical mobility become both possible and gratifying processes within a socio-economic fabric.

## RECOMMENDATIONS

Any suggestions for possible plans for this area can be considered in terms of each individual settlement or for the area as a whole, and also in terms of immediacy or the more distant future.

In order to avoid theoretical discussions, the suggestions offered in this report have been selected for their pragmatic value and are crosscut by the factors mentioned above.

## COMMUNITY DEVELOPMENT

The primary suggestions in regard to the development of these communities is in terms of improvements in the utilities and services. The first of these would be for the installation of larger electrical generators to provide a surplus of power that could be gradually utilized as increasing numbers of Indians and Metis have electricity installed in their homes. The expense in wiring these residences could be defrayed by minimum monthly payments on a long term amortization basis.

The capacities of freezers in most communities are inadequate as these have to be used by all of the residents. The construction of additional units, or extensions to existing units, would provide increased space that could be allotted on the principle of locker space. This might increase the amount of saving of country produce over that which occurs at present.

At each of the Fort settlements, a community bath house with showers and laundry facilities might be as well received as they have been at other northern settlements.

## CO-OPERATIVES

Fort Franklin is the only settlement with an Indian co-operative and there appears to be a potential at both Forts Norman and Good Hope for the development of co-operatives. These organizations can not only help to increase the range and quality of handicrafts produced and provide additional sources of income, but they can act as catalysts for the development of other community enterprises in which the local people have a greater interest and investment.

These co-operatives could eventually unite as a collective group to provide the finances and personnel for the development of larger projects such as tourism or small industries. In all forms these organizations can provide learning experience in the various economic processes that at present are not available to the local people. They can be a source of satisfaction and pride through achievement, and a vehicle whereby people can eventually come to direct and manage their own destinies.

At present, neither Fort Norman nor Fort Good Hope have either a co-operative or very much in the way of a handicraft industry. With assistance and training both could be developed. The fossil deposits at Fort Good Hope, and the clay seams near Fort Norman need investigating as possible sources for the development of local talent and as a means of extending the range of arts and crafts that could be produced.

### DEVELOPMENT OF THE AREA

Of all the settlements, Norman Wells has the greatest potential for economic development. It is more accessible to the transportation systems in the area, and freight rates to and from the settlement are the lowest. The all weather airport that can accommodate large aircraft not only offers good accessibility and cheaper rates, but also a faster delivery of freight and personnel to this point.

The availability of a local source of relatively cheap fuel offers a considerable saving in operating costs, and the existing water, hydro and garbage — sewage disposal systems are the most efficient and least costly in the area.

Construction and service costs would be least expensive for industries being established at Norman Wells, and this settlement also offers the best building sites within easy reach of the community.

One pilot project study that might be considered for this settlement is the developing of a market garden industry, and an animal-poultry experimental farm. At present all fresh food has to be imported, and there are local and northern markets for this produce that are easily accessible through existing transportation systems. From Norman Wells the costs of freight to these markets would be at half of what they are at present.

Other small industries that might be considered for Norman Wells is a small repair shop and boat building complex that could service the other settlements in the area, and those of the Lower Mackenzie. The location of this settlement and the frequency of air service might also suggest the development of a dry cleaning service, a bakery, and a take-out speciality food centre all of which can be expanded to meet the demands of other settlements.

Norman Wells is a stopping point for north and south-bound traffic, and a handicraft retail store in the air terminus would provide an outlet for the handicraft producers of the settlements at prices that would be only slightly affected by transportation costs. The development of a mail order custom-made service in conjunction with the store might also be feasible if items could be ordered on the basis of standardized patterns and sizes. A coffee shop, operated in conjunction with the store, would provide an additional source of revenue.

Another pilot project industry that might be established at Norman Wells is that of a fish drying/curing plant. Fish could be bought at all of the settlements and shipped to this central plant for processing. The end product could either be sold as fish flour for human consumption, or mixed with other ingredients and sold as dog food, or sold as smoked/dried fish similar to that found in delicatessen stores in the south.

In the initial stages, a number of small pilot industries would provide year round employment for a relatively limited labour force, but as expansion occurs these people constitute the core around which specialization of skills and job mobility can be centered, and the group from which training and management personnel can be drawn.

It could be suggested that the Territorial Government create an organization to invest in and manage a limited number of industrial projects until such time as developmental processes no longer make this necessary.

Long term investments such as tourism and hotels would not only help to increase the in-flow of traffic from the south and provide employment, but they could be a continuing sources of revenue. Other smaller projects might be encouraged through the leasing of plant and equipment, with an incentive to operators to purchase these pilot industries with low interest long term amortization loans.

Subsidization, tax exemptions, and low interest loans are only a few of the more obvious suggestions that can be made to encourage entrepreneurial activity. The provision of trained managers and personnel of varying skills to provide assistance and training for local people has also been suggested.

## TOURISM

Bissett has dealt extensively with the potential and present state of the tourist industry in the Lower Mackenzie, and, while the potential of the Central Mackenzie tends to be similar in many respects, this area is missed unless tourist accommodation and excursions are developed at Norman Wells. As this settlement is a stopping point on the main airline route and the central pivot for feeder services to the other settlements the construction of a tourist lodge-hotel would provide not only the basic structure for the development of the tourist potential of the area, but accommodation for guests in transit to and from the hunting camps in the mountains. The complex could also be used by visitors to the area who wish to break their journey for a short visit, or by transients and intra-regional travellers.

The existing tourist facilities at Norman Wells can accommodate 20 by sleeping 4 to a room in double bunks, in several house trailers. With the development of a lodge-hotel type of complex, the facilities could cater to both local and tourist traffic on a year-round basis.

Bissett has stated that the cost of developing a twenty-person fishing lodge on Great Bear Lake in 1964-65 was over \$130,000. With the period of operation of nine weeks, the cost of this type of holiday is within the range of a relatively limited sector of the population, and this type of establishment is beyond the means of the local entrepreneur.

In the case of Indian co-operatives entering the tourist industry, low cost, attractively designed buildings can be constructed using local lumber, as has been the case at Colville Lake. Experienced management for the enterprise might be arranged by affiliation with a training school in the south that provides training for hotel and catering personnel. This tourist complex could also be used as an on-the-job training center for guides, and as a pre-vocational learning experience and summer employment opportunity for the young adults at high schools.

The tourist appeal of the district has barely been developed, and unless cost of transportation is reduced and facilities extended, the utilization of the potential will continue to be restricted. There is nothing to add to Bissett's discussion of tourism in the district except to reiterate that means must be found to encourage and assist entrepreneurs, and if necessary, for the government to become an investor in the tourist industry.

The development of hunting and fishing facilities and tourist attractions such as riverside parks, historical sites, a Mackenzie carnival week, and increasing access to these by means of U Drive or U Paddle river craft could lead to an increasing number of jobs for the Indians and Metis as guides, river patrols and park wardens. Another tourist attraction that might benefit the whole Mackenzie District, and appeal to a wider range of people, might be created through the development of a small fleet of barges built to resemble the stern wheelers of an earlier period.

Even though one scheme by a private company in Edmonton for the construction of an 80 passenger vessel did not materialize, the project might be worth re-evaluating as a Crown Corporation enterprise that could be operated in conjunction with the present barge system.

The advantages of a river system of transportation is that it could offer a relatively inexpensive cruising holiday with disembarkation and pick-up points from Hay River to Tuktoyaktuk. Passengers could visit the settlements en route, or stop over wherever facilities existed, and continue or return by another vessel. With Norman Wells as a stopover point for the air service the two transportation systems could be combined by visitors to allow them over a period of time, a greater freedom and flexibility of itineraries, and a wider range of alternatives than would otherwise be possible.

As an industry, the scheme provides an additional source of revenue to the government of the N.W.T. as operators of the barges, it opens up the country to an increasing number of visitors and increases the likelihood of the cottage and tourist industries of the settlements being used.

#### TRAINING AND EDUCATION

It would appear that there are potentials for the development of Indian co-operatives which with guidance and assistance of qualified personnel could develop community entrepreneurial services and industries, and extend the range of their activities into developing the tourist potential of the area. With training and experience in management and business practices the local people could eventually assume the responsibility for the management of their own affairs on an ever increasing scale.

Retraining and adult education programmes need to be implemented and extended to increase the range of skills and develop abilities that can either be used locally or where employment is available. Assistance with relocation for those desiring to emigrate to other centers might be offered either apart from, or in conjunction with, training programmes. The implementation of relocation programmes needs to be extended to include assistance with adjustment to jobs and new communities, and to employer and community education so as to facilitate these processes.

Investigation is also required into the possibility of providing job training, placement and assistance with relocation at the high school level for young graduates wishing to emigrate to urban centers throughout Canada. With the extension of apprentice type training programmes these young adults are not only afforded the opportunity of learning additional skills, but also the time required to adjust and evaluate the choices ahead of them.

Studies are required of the perceptions, values and attitudes of high school students in regard to their aspirations preferences and vision of their future. Studies are also required to measure the effects of education on children being exposed to different types of schools, of the results of vocational training programmes, and of the congruence between policies and programmes in relation to all of these.

### SUMMARY OF RECOMMENDATIONS

- (1) Improvement of community services through the extension of facilities for hydro, larger community freezers, and the building of a community bath house with laundry facilities.
- (2) Technical assistance provided to the Indians and Metis for the development of co-operatives and the initiation of co-operative enterprises.
- (3) The development of Norman Wells as a growth center for industrial enterprises.
- (4) Feasibility studies and pilot projects to be situated at Norman Wells for a fish drying plant, a market garden industry, an animal-poultry farm, a bakery, dry cleaning service and an equipment repair/boat building complex.
- (5) Incorporating a handicraft retail store and coffee shop into the airport.
- (6) The building of a hotel with a speciality food take-out service that can be developed to cater to the demands of the other settlements as well.
- (7) The building of handicraft workshops in the settlements, and the development of the handicraft phase of the economy.
- (8) That plans be made for the development of the tourist potential of the area with a central base at Norman Wells and feeder services to the settlements.
- (9) Up-grading of education and marketable skills for the Indians and Metis.
- (10) Financial assistance and social support for families and or high school graduates wishing to relocate in other centers.
- (11) Incentives to the private sector to locate industries in the area.

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## AIR TRANSPORTATION - PASSENGER AND FREIGHT RATES

## APPENDIX 1

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| Source                                    | Destination          | Air Miles | Approx.<br>Flying Time | Aircraft<br>Type   | One Way<br>Passenger<br>Fare | Air Freight Rates |  |                     |
|---|----------------------|-----------|------------------------|--------------------|------------------------------|-------------------|--|---------------------|
|   |                      |           |                        |                    |                              | Per lb.           | Min. charge 4.00<br>or charge for 25 lbs.<br>whichever is higher<br>Per cwt. | Per lb.             |
| Air Express Rates<br>(Min. charge \$3.00) |                      |           |                        |                    |                              |                   |  |                     |
| Edmonton                                  | Fort Smith           | 472       | 2 hrs. 10 min.         | Douglas<br>DC - 6B | 43.00                        | .18<br>.08        | .15<br>.08   | 12.00<br>6.50<br>S  |
| Yellowknife                               |                      | 656       | 3 hrs. 10 min.         | DC - 6B            | 60.00                        | .25               | .17<br>.09   | 15.00<br>8.00<br>S  |
| Norman Wells                              | 1101<br>(direct 951) |           | 5 hrs. 30 min.         | DC - 6B            | 111.00                       | .48               | .44<br>.22   | 25.00<br>18.00<br>S |
| Inuvik                                    |                      | 1369      | 6 hrs. 50 min.         | DC - 6B            | 144.00                       | .63               | .44<br>.25   | 25.00<br>20.00<br>S |
| Fort Smith                                | Yellowknife          | 189       | 1 hr.                  | DC - 6B            | 18.00                        | .08               | .06  | 5.00<br>*           |
| Norman Wells                              |                      | 634       | 3 hrs. 20 min.         | DC - 6B            | 68.00                        | .48               | .31<br>.25   | 25.00<br>20.00<br>S |
| Inuvik                                    |                      | 918       | 4 hrs. 40 min.         | DC - 6B            | 101.00                       | .68               | .31<br>.25   | 25.00<br>20.00<br>S |
| Yellowknife                               | Norman Wells         | 420       | 2 hrs. 20 min.         | DC - 6B            | 55.00                        | .48               | .31<br>.29   | 25.00<br>20.00<br>S |
| Inuvik                                    |                      | 744       | 3 hrs. 40 min.         | DC - 6B            | 86.00                        | .63               | .31<br>.30   | 25.00<br>20.00<br>S |
| Norman Wells                              | Inuvik               | 284       | 1 hr. 20 min.          | DC - 6B            | 35.00                        | .30               | .13  | 10.00<br>*          |

\* Northbound and Southbound Rates are identical

## APPENDIX 11

## GENERAL HUNTING LICENCES ISSUED 1966\*

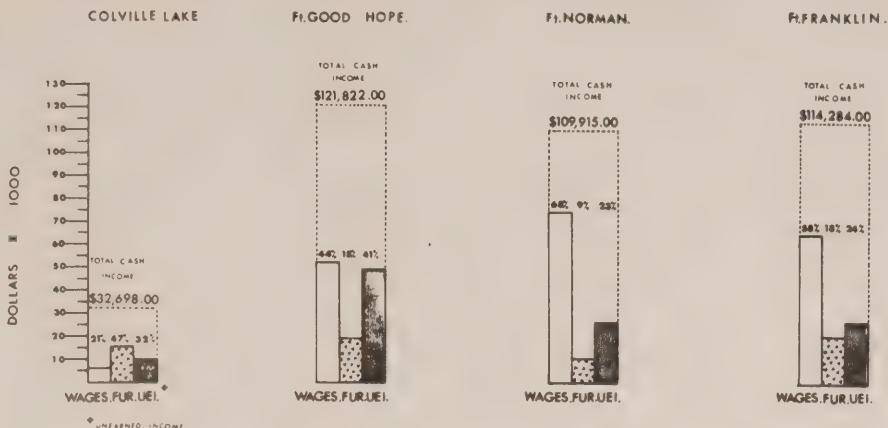
| Settlement<br>and<br>Ethnic Gr. | Number of<br>Licences Issued | Number not<br>Returned |        | Licences ret.<br>indicating no<br>game taken |        | Licences ret.<br>showing game<br>taken |        | Cash Value<br>of<br>Game Taken |             |
|---------------------------------|------------------------------|------------------------|--------|--|--------|--|--------|--------------------------------|-------------|
|                                 |                              | Male                   | Female | Male   | Female | Male                                   | Female | Male                           | Female      |
| Norman<br>Wells                 | 10                           | —                      | —      | —  | 5      | —                                      | 5      | —                              | \$2,098.00  |
| Fort<br>Norman                  |                              |                        |        |  |        |  |        |                                |             |
| Indians                         | 45                           | 3                      | 4      | 2  | 7      | —                                      | 34     | 1                              | \$11,801.00 |
| Metis                           | 13                           | 3                      | —      | 1  | 6      | 1                                      | 7      | 1                              | \$1,162.00  |
| Total                           | 58                           | 6                      | 4      | 3  | 13     | 1                                      | 41     | 2                              | \$12,963.00 |
| Fort<br>Good Hope               |                              |                        |        |  |        |  |        |                                |             |
| Indians                         | 65                           | 8                      | 5      | —  | 7      | 7                                      | 53     | 1                              | \$12,605.00 |
| Metis                           | 5                            | 2                      | —      | 1  | —      | —                                      | 5      | 1                              | \$1,077.00  |
| Total                           | 70                           | 10                     | 5      | 1  | 7      | 7                                      | 58     | 2                              | \$13,682.00 |
| Colville<br>Lake                |                              |                        |        |  |        |  |        |                                |             |
| Indians                         | 20                           | 4                      | —      | —  | —      | 3                                      | 20     | 1                              | \$13,440.00 |
| Metis                           | 5                            | —                      | 1      | —  | 1      | —                                      | 3      | —                              | \$2,719.00  |
| Total                           | 25                           | 4                      | 1      | —  | 1      | 3                                      | 23     | 1                              | \$16,163.00 |
| Fort<br>Franklin                |                              |                        |        |  |        |  |        |                                |             |
| Indians                         | 67                           | 9                      | 15     | 6  | 1      | 1                                      | 51     | 2                              | \$6,786.00  |
| Metis                           | 2                            | —                      | —      | —  | —      | —                                      | 2      | —                              | \$563.00    |
| Total                           | 69                           | 9                      | 15     | 6  | 1      | 1                                      | 53     | 2                              | \$7,421.00  |

\* These licences are a trapping and hunting licence - game and fur taken is recorded on the licence at the time of yearly renewal of licences.

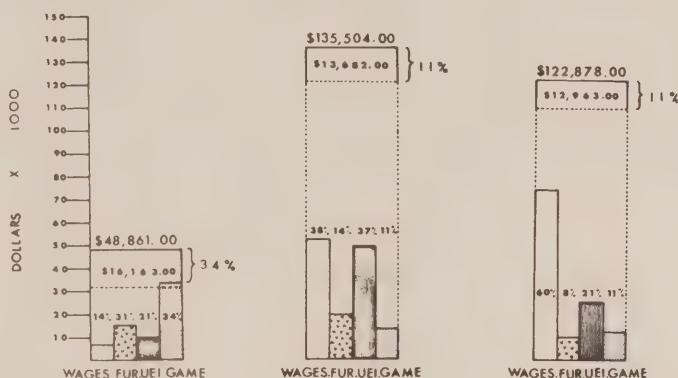
APPENDIX III  
SCHOOL ATTENDANCE 1966-67

| SUMMARY OF ATTENDANCE FOR THE YEAR |        | MONTHLY SUMMARY OF ATTENDANCE |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
|------------------------------------|--------|-------------------------------|------|------|------|------|------|------|------|-----|------|-------|------|------|------|------|------|------|------|-----|------|----|----|----|----|
|                                    |        | Sept.                         | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June |    |    |    |    |
| <b>PORT GOOD HOPE</b>              |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
|                                    |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Number of pupils registered        | 28     | 23                            | 22   | 28   | 28   | 28   | 28   | 28   | 28   | 28  | 28   | 28    | 28   | 28   | 28   | 28   | 28   | 28   | 28   | 28  | 28   | 28 | 28 | 28 |    |
| Average of daily attendance        | 19     | 16                            | 16   | 18   | 20   | 17   | 23   | 20   | 17   | 23  | 20   | 17    | 23   | 20   | 17   | 23   | 20   | 17   | 23   | 20  | 17   | 23 | 20 | 17 |    |
| Percentage monthly attendance      | 98     | 87                            | 76   | 80   | 77   | 61   | 83   | 73   | 61   | 76  | 73   | 61    | 83   | 73   | 61   | 76   | 73   | 61   | 76   | 73  | 61   | 76 | 73 | 61 |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| <b>PORT NORMAN</b>                 |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
|                                    |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Number of pupils registered        | 26     | 24                            | 25   | 25   | 25   | 24   | 24   | 24   | 24   | 24  | 24   | 24    | 24   | 24   | 24   | 24   | 24   | 24   | 24   | 24  | 24   | 24 | 24 | 24 |    |
| Average of daily attendance        | 23     | 17                            | 16   | 13   | 13   | 13   | 16   | 17   | 17   | 19  | 18   | 17    | 16   | 17   | 18   | 17   | 16   | 17   | 18   | 17  | 16   | 17 | 18 | 17 |    |
| Percentage monthly attendance      | 93     | 70                            | 63   | 53   | 50   | 50   | 71   | 70   | 71   | 70  | 71   | 70    | 71   | 70   | 71   | 70   | 71   | 70   | 71   | 70  | 71   | 70 | 71 | 70 |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| <b>PORT FRANCIS</b>                |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
|                                    |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Number of pupils registered        | 18     | 19                            | 18   | 16   | 16   | 16   | 16   | 16   | 16   | 18  | 18   | 17    | 15   | 14   | 14   | 14   | 14   | 14   | 14   | 14  | 14   | 14 | 14 | 14 |    |
| Average of daily attendance        | 17     | 15                            | 14   | 14   | 15   | 15   | 15   | 15   | 15   | 16  | 16   | 15    | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 14  | 14   | 14 | 14 | 14 |    |
| Percentage monthly attendance      | 94     | 97                            | 93   | 90   | 89   | 92   | 91   | 90   | 89   | 85  | 99   | 98    | 98   | 96   | 98   | 97   | 94   | 93   | 91   | 98  | 98   | 98 | 91 | 99 | 96 |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| <b>PORT FRANCIS</b>                |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
|                                    |        |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Number of pupils registered        | 18     | 19                            | 18   | 16   | 16   | 16   | 16   | 16   | 16   | 18  | 18   | 17    | 15   | 14   | 14   | 14   | 14   | 14   | 14   | 14  | 14   | 14 | 14 | 14 |    |
| Average of daily attendance        | 17     | 15                            | 14   | 14   | 15   | 15   | 15   | 15   | 15   | 16  | 16   | 15    | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 14  | 14   | 14 | 14 | 14 |    |
| Percentage monthly attendance      | 94     | 97                            | 93   | 90   | 89   | 92   | 91   | 90   | 89   | 85  | 99   | 98    | 98   | 96   | 98   | 97   | 94   | 93   | 91   | 98  | 98   | 98 | 91 | 99 | 96 |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Both   |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Indian |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Average attendance                 | Other  |                               |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |
| Attendance as a percentage         | Other  |                               |      | </   |      |      |      |      |      |     |      |       |      |      |      |      |      |      |      |     |      |    |    |    |    |

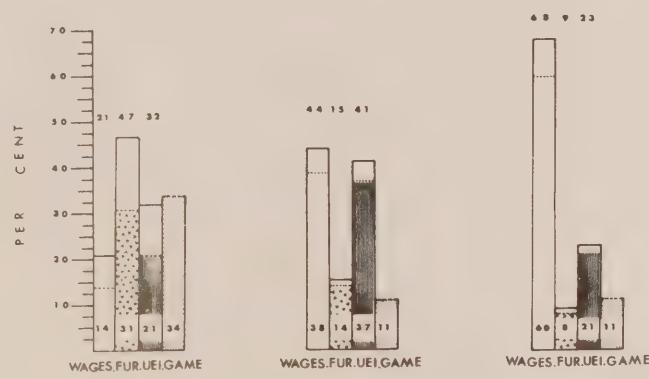
## COMPOSITION OF CASH INCOME, 1966.\*



## COMPOSITION OF REAL INCOME, 1966.



## CHANGES IN PROPORTIONS - ACTUAL &amp; REAL INCOMES, 1966.



## LABOUR FORCE BY SEX GROUPING 1966.

